

<b>SUBMIT BID TO:</b>  Seminole County 1101 E. 1st Street, Room 3208 Sanford, Florida 32771  <b>PURCHASING AND CONTRACTS DIVISION</b>	<p style="text-align: center;"><b>INVITATION FOR BID</b></p> <p style="text-align: center;">and Bidder Acknowledgment</p>
Contact: Gloria Garcia, CPPB 407-665-7123 - Phone 407-665-7956 - Fax ggarcia@seminolecountyfl.gov	<p style="text-align: center;"><b>Bid-2112-05/GMG</b>  <b>Purchase of Generator Power</b>  <b>Receptacles for Sewage Pump-</b>  <b>Stations</b></p>
Bid Due Date: <b>January 26, 2005</b>  Bid Due Time: <b>2:00 P.M.</b>	<b>Location of Public Opening:</b>  County Services Building, Room #3208 1101 E. 1st Street, Sanford, Florida 32771
Bidder Name:	Federal Employer ID Number or SS Number:
Mailing Address:	If returning as a "No Submittal", state reason (if so, return only this page):
City, State, Zip:	
Type of Entity: <i>(Circle one)</i>  Corporation      Partnership Proprietorship      Joint Venture	X _____ Authorized Signature (Manual)
Incorporated in the State of:	
Telephone Number:	Typed Name:
Toll Free Telephone Number: (800)	Title:
Fax Number:	Date:

## THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR BID

The Applicant is expected to completely analyze the information contained in this Invitation for Bid as guidance for the preparation of the submittal. The Applicant's submittal shall be sufficiently specific, detailed, and complete to clearly and fully demonstrate the Applicant's understanding of the proposed work requirements.

**Section 1**  
**General Description of Project**

Contractor will be responsible for all incidentals necessary for the delivery of Crouse Hinds generator power receptacles for sewage pump-stations as indicated in the Bid Documents. Provider shall be responsible for transportation and coordination of delivery. Quantities are specified in Section 4 of the solicitation

## **Section 2 – Instructions to Bidders**

**CONTACT:** All prospective Bidders are hereby instructed not to contact any member of the Seminole County Board of County Commissioners, County Manager, or Seminole County Staff members other than the noted contact person regarding this Bid or their bid at any time prior to the posting on the Web Site of the final evaluation and recommended ranking by County staff for this project. Any such contact shall be cause for rejection of your bid.

**PUBLIC OPENING:** Bids shall be received at the Purchasing Division at the above referenced address by the specified time and date. As soon as possible thereafter the names of the Bidders shall be read aloud at the specified location. Persons with disabilities needing assistance to participate in the Public Opening should call the contact person at least 48 hours in advance of the Public Opening at 665-7116.

**DELAYS:** The COUNTY, at its sole discretion, may delay the scheduled due dates indicated above if it is to the advantage of the COUNTY to do so. The COUNTY will notify Bidders of all changes in scheduled due dates by posting the notification in the Purchasing and Contracts Web Site.

**BID SUBMISSION AND WITHDRAWAL:** The COUNTY will receive bids at the above address. The outside of the envelope/container must be identified with the Bid Number and title as stated above. The envelope/container must also include the Bidder's name and return address.

Receipt of the bid in the Purchasing Division after the time and date specified due to failure by the Bidder to provide the above information on the outside of the envelope/container shall result in the rejection of the bid.

**Bids received after the specified time and date shall be returned unopened.** The time and date will be scrupulously observed. The COUNTY will not be responsible for late deliveries or delayed mail. The time/date stamp clock located in the Purchasing Division shall serve as the official authority to determine lateness of any bid.

The COUNTY cautions Bidders to assure actual delivery of mailed or hand-delivered bids prior to the deadline set for receiving bids. Telephone confirmation of timely receipt of the bid may be made by calling (407) 665-7116, before the 2:00 deadline.

Bidders shall submit **FOUR (4) COMPLETE SETS** (one [1] original and three (3) copies) of the complete bid with all supporting documentation in a sealed envelope/container marked as noted above. The Bidder may submit the bid in person or by mail.

Bidders may withdraw their bids by notifying the COUNTY in writing at any time prior to the time set for the bid deadline. Bidders may withdraw their bids in person or through an authorized representative. Bidders and authorized representatives must disclose their identity and provide a signed receipt for the bid. Bids, once opened, become the property of the COUNTY and will not be returned to the Bidders.

**INQUIRIES:** All Bidders shall carefully examine the Bid documents. Any ambiguities or inconsistencies shall be brought to the attention of the County Purchasing and Contracts

Division in writing prior to the due date; failure to do so, on the part of the Bidder, will constitute an acceptance by the Bidder of any subsequent decision. Any questions concerning the intent, meaning and interpretations of the Bid documents including the attached draft agreement, shall be requested in writing, and received by the County Purchasing and Contracts Division at least seven (7) business days prior to the due date. The County will not be responsible for any oral instructions made by any employee(s) of the COUNTY in regard to this Bid. Telephone No. 407-665-7116, Fax No. 407-665-7956.

**ADDENDUM:** Should revisions to the Bid documents become necessary; the COUNTY will post addenda information on the COUNTY's Web Site. All Bidders should check the COUNTY's Web Site or contact the COUNTY's Purchasing and Contracts Division at least seven (7) calendar days before the date fixed to verify information regarding Addenda. Failure to do so could result in rejection of the bid as unresponsive.

Bidder shall sign, date, and return the latest addendum with their Bid. Previous addenda will be deemed received.

Addenda information will be posted on the COUNTY's Web Site at [www.seminolecountyfl.gov](http://www.seminolecountyfl.gov). It is the sole responsibility of the Bidder to ensure he/she obtains information related to Addenda.

**SELECTION PROCESS AND AWARD:** The award will be made to the lowest priced, responsive, responsible Bidder. The Bidder(s) understands that this Bid does not constitute an agreement or a contract with the Bidder. The COUNTY reserves the right to reject all bids, to waive any formalities, and to solicit and re-advertise for new bids, or to abandon the project in its entirety.

In evaluating Bids, the COUNTY shall consider the information provided by the Apparent Low Bidder as described in these "INSTRUCTIONS TO BIDDERS."

Any of the following causes may be considered as sufficient grounds for disqualification of a Bidder or the rejection of a Bid:

- (a) Submission of more than one (1) Bid for the same Work by any entity under the same or different names.
- (b) Evidence of collusion among Bidders.
- (c) Submission of an unbalanced Bid in which prices quoted for some items are out of proportion to the prices quoted for other or similar items in the same Bid.
- (d) Lack of responsibility as shown by past Work from the standpoint of life safety including, but not limited to, strict adherence to all maintenance of traffic requirements of COUNTY, workmanship, progress and financial irresponsibility.
- (e) Uncompleted Work for which the Apparent Low Bidder is committed by contract which might hinder or prevent the prompt completion of Work under this Bid if an Agreement would have been awarded to the Apparent Low Bidder.

(f) Falsification of any entry made on the Bid Documents shall be deemed a material irregularity and will be grounds, at the COUNTY's option, for disqualification of the Apparent Low Bidder or rejection of the Bid.

(g) This section shall be construed liberally to benefit the public and not the Apparent Low Bidder; however, any other evidence which may hinder or otherwise delay completion of the Project may be grounds for disqualification.

(h) Non-compliance with the submittal requirements of these Instructions To Bidders.

**AWARD CRITERIA: The recommendation of award will be based on, but not limited to the following criteria:**

(a) The ability, capacity and skill of the Apparent Low Bidder to perform the Work.

(b) Whether the Apparent Low Bidder can perform the Work promptly, or within the time specified, without delay or interference.

(c) The character, integrity, reputation, judgment and efficiency of the Apparent Low Bidder.

(d) The quality of performance of previous contracts or services to Seminole County or any other agency or client.

(e) The previous and existing compliance by the Apparent Low Bidder with Chapter 220, Seminole County Purchasing Code & Procedures, the life safety requirements of COUNTY, and other laws and ordinances, regulations.

(f) The sufficiency of the financial resources and ability of the Apparent Low Bidder to perform the Work.

(g) The quantity, availability and adaptability of the Apparent Low Bidder to perform the Agreement or service to the particular needs of the COUNTY.

(h) The ability of the Apparent Low Bidder to retain employees for the purpose of this Work.

(i) The experience of the Apparent Low Bidder performing in a similar manner as required by this Agreement. Minimum of three (3) satisfactory years shall be required.

(j) The type, structure and experience of the local or branch management proposed.

(k) Quality Control Program.

(l) Claims and Litigation filed against the Apparent Low Bidder or filed by the Apparent Low Bidder for equitable adjustment, contract claim or litigation in the past five (5) years.

(m) Reprimand of any nature or suspension by the Department of professional Regulation or any other regulatory agency or professional association within the last five (5) years.

**BID PREPARATION COSTS:** Neither the COUNTY nor its representatives shall be liable for any expenses incurred in connection with preparation of a response to this Bid. Bidders should prepare their bids simply and economically, providing a straightforward and concise description of the Bidder's ability to meet the requirements of the Bid.

**ACCURACY OF BID INFORMATION:** Any Bidder which submits in its bid to the COUNTY any information which is determined to be substantially inaccurate, misleading, exaggerated, or incorrect, shall be disqualified from consideration.

**INSURANCE:** Misrepresentation of any material fact, whether intentional or not, regarding the Bidder's insurance coverage, policies or capabilities may be grounds for rejection of the bid and rescission of any ensuing contract. **Copy of the insurance certificate shall be furnished to the County prior to commencement of Work, if applicable.**

**LICENSES:** Bidders, both corporate and individual, must be fully licensed and certified for the type of work to be performed in the **State of Florida** at the time of submittal of Bid. Should the Bidder not be fully licensed and certified, its bid shall be rejected. Any permits, licenses, or fees required shall be the responsibility of the Bidder. No separate or additional payment will be made for these costs. Adherence to all applicable code regulations, Federal, State, County, City, etc., are the responsibility of the Bidder.

**POSTING OF BID AWARD:** Recommendation for award will be posted for review by interested parties at the Purchasing Division bulletin board and the County's Web Page ([www.co.seminole.fl.us/purchasing](http://www.co.seminole.fl.us/purchasing)) prior to submission through the appropriate approval process. Failure to file protest to the Purchasing Manager within the time prescribed in the COUNTY's Purchasing Code and Procedures shall constitute a waiver of proceedings.

**PUBLIC RECORDS:** Upon award recommendation or ten (10) days after opening, bids become "public records" and shall be subject to public disclosure consistent with Chapter 119, Florida Statutes. Bidders must invoke the exemptions to disclosure provided by law in the response to the Bid, and must identify the data or other materials to be protected, and must state the reasons why such exclusion from public disclosure is necessary.

**PROHIBITION AGAINST CONTINGENT FEES:** It shall be unethical for a person to be retained, or to retain any company or person, other than a bonafide employee working solely for the Consultant to solicit or secure this Agreement and that it has not paid or agreed to pay any person, company, corporation, individual or firm, other than a bonafide employee working solely for the SERVICE PROVIDER, any fee, commission, percentage, gift, or other consideration contingent upon or resulting from award or making of this Agreement. For the breach or violation of this provision, the COUNTY shall have the right to terminate the Agreement at its sole discretion, without liability and to deduct from the Agreement price, or otherwise recover, the full amount of such fee, commission, percentage, gift, or consideration.

**ACCEPTANCE / REJECTION:** Seminole County reserves the right to accept or reject any or all bids and to make the award to those Bidders, who in the opinion of the County will be in the best interest of and/or the most advantageous to the County. Seminole County also reserves the right to reject the bid of any vendor who has previously failed in the proper performance of

an award or to deliver on time contracts of a similar nature or who, in the County's opinion, is not in a position to perform properly under this award. Seminole County reserves the right to inspect all facilities of Bidders in order to make a determination as to the foregoing. Seminole County reserves the right to waive any irregularities, informalities, and technicalities and may, at its discretion, request a re-procurement.

**ADDITIONAL TERMS AND CONDITIONS:** Unless expressly accepted by the County, only the terms and conditions in this document shall apply: No additional terms and conditions included with the bid response shall be considered. Any and all such additional terms and conditions shall have no force and effect, and are inapplicable to this bid if submitted either purposely through intent or design, or inadvertently appearing separately in transmittal letters, specifications, literature, price lists or warranties. It is understood and agreed that the general and/or any special conditions in these Bid Documents are the only conditions applicable to this bid and the Bidder's authorized signature on the Bid Response Form attests to this. Exceptions to the terms and conditions will not be accepted.

**RESPONSIBILITY:** A Bidder must have at the time of bid opening, a manufacturing plant in operation, or be a fully authorized agent or representative of the product bid, and capable of producing or providing the items bid, and follow-up parts and service, including any warranty services as applicable, and so provide such certification upon request. The County reserves the right, before award, to require a Bidder to submit such evidence of his qualifications as it may deem necessary, and may consider any evidence available such as financial, technical, and other qualifications and abilities of the Bidder, including past performance (experience) with the County. This information will be used to determine the Bidder's responsibility.

**BIDS TO REMAIN FIRM.** All Bids shall remain firm for ninety (90) Days after the day of the Bid opening. Extensions of time when Bids shall remain opened beyond the ninety-day period may be made only by mutual agreement between Seminole County and the Selected Bidder

**PURCHASING CODE:** The Purchasing Code and Procedures apply in its entirety with respect to this Bid.

**AFFIRMATION:** By submission of a bid, Bidder affirms that his/her bid is made without prior understanding, agreement or connection with any corporation, firm, or person submitting a bid for the same materials, supplies, equipment or services, and is all respects fair and without collusion or fraud. Bidder agrees to abide by all conditions of this Invitation for Bid and the resulting contract.

**MISTAKES IN BID:** Bidders are expected to examine the terms and conditions, specifications, delivery schedule, bid prices, extensions and all instructions pertaining to supplies and services. Failure to do so will be at Bidder's risk. In the event of extension error(s), the unit price will prevail and the Bidder's total offer will be corrected accordingly. Written amounts shall take precedence over numerical amounts. In the event of addition errors(s), the unit price, and extension thereof, will prevail and the Bidder's total offer will be corrected accordingly. Bids having erasures or corrections must be initialed in ink by the Bidder.

**DISQUALIFICATION OF BIDDER:** More than one bid from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. Reasonable grounds for believing that a Bidder is involved in more than one bid submittal will be cause for rejection of all bids in which such Bidders are believed to be involved. Any or all

bids will be rejected if there is reason to believe that collusion exists between Bidders. Bids in which the prices obviously are unbalanced will be subject to rejection.

**GOVERNMENTAL RESTRICTIONS:** In the event that any governmental restrictions are imposed which would necessitate alteration of the material quality, workmanship or performance of the items offered on this bid prior to their delivery, it shall be the responsibility of the Bidder to notify the Purchasing and Contracts Division at once, indicating in his/her letter the specific regulation which required an alteration, including any price adjustments occasioned thereby. The County reserves the right to accept such alteration or to cancel the contract or purchase order at no further expense to the County.

### **Section 3 – Instructions for the preparation of Bids**

The Bidder(s) warrants its response to this Invitation for Bid to be fully disclosed and correct. The firm must submit a bid complying with this Invitation for Bid, and the information, documents and material submitted in the bid must be complete and accurate in all material aspects.

Bidders are advised to carefully follow the instructions listed below in order to be considered fully responsive to this Bid. Bidders are further advised that lengthy or overly verbose or redundant submissions are not necessary. Compliance with all requirements will be solely the responsibility of the Bidder. Failure to provide requested information may result in disqualification of response.

The bid must be divided into three (3) sections with references to parts of this Bid done on a section number/paragraph number basis. The three (3) sections shall be named:

1. Required Submittals
2. Past Performance
3. Price Proposal

#### **1. REQUIRED SUBMITTALS:**

##### **Invitation for Bid – Page #1 of Package**

- Name of Individual, Partnership, Company, or Corporation submitting bid;
- Signature(s) or representative(s) legally authorized to bind the Bidder.
- Address, Telephone Number, Fax Number and all required information.

**Summary of Litigation:** Provide a summary of any litigation, claim(s), or contract dispute(s) filed by or against the Bidder in the past five (5) years which is related to the services that Bidder provides in the regular course of business. The summary shall state the nature of the litigation, claim or contract dispute, a brief description of the case, the outcome or projected outcome, and monetary amounts involved.

**License Sanctions:** List any regulatory or license agency sanctions within the past 5 years.

**Bidder's Certification:** Complete the "Bidder's Certification Form" included in this bid package as indicated.

**Conflict of Interest Statement:** Complete the "Conflict of Interest Statement" included in this bid package as indicated.

**Compliance with the Public Records Law:** See form included in this package.

**2. PAST PERFORMANCE:**

The Bidder shall include qualifications and past performance of the firm/individual(s) who will provide the services, including resumes. The submission must include:

- A. List five (5) references for which your company provided similar services related to those specified in the Scope of Services. List the names of the client (name, address, telephone number, fax numbers and the title of position that was filled by your company).

**3. PRICE BID**

The Price Proposal shall use the Price Proposal forms included in the Bid Documents. Price Bids not submitted on the attached form shall render the Bid unresponsive.

**Section 4 –  
Price Submittal**

**PROJECT: Purchase of Crouse Hinds Generator Power Receptacles**

**COUNTY CONTRACT NO.: BID-2112-05/GMG**

Name of Bidder: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Street Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Phone Number: (\_\_\_\_\_) \_\_\_\_\_

FAX Number: (\_\_\_\_\_) \_\_\_\_\_

Pursuant to and in compliance with the Invitation for Bid, Instructions to Bidders, and the other documents relating thereto, the undersigned Bidder agrees to provide and furnish required services/commodities, all in strict conformity Bid Documents, including Addenda Nos. \_\_\_\_\_ through \_\_\_\_\_, on file at the Purchasing and Contracts Division for the amount hereinafter set forth.

The undersigned, as Bidder, declares that the only persons or parties interested in this bid as principals are those named herein; that this bid is made without collusion with any person, firm or corporation; and he proposes and agrees, if the bid is accepted, that he/she will accept the order from the COUNTY in the form set forth in the Bid Documents; that he/she will furnish the Insurance Certificates.

**1. Crouse Hinds Model # ARC104E, 4P 100A 240 VAC RCPT**

Quantity: 275      Price: \$ \_\_\_\_\_ / each      Extended Cost: \$ \_\_\_\_\_

**2. Crouse Hinds Model # ARC104P, 4P 100A 480 VAC RCPT**

Quantity: 25      Price: \$ \_\_\_\_\_ / each      Extended Cost: \$ \_\_\_\_\_

**3. Crouse Hinds Model # APJC104E, 4P 100A 240 VAC PLUG**

Quantity: 25      Price: \$ \_\_\_\_\_ / each      Extended Cost: \$ \_\_\_\_\_

**4. Crouse Hinds Model # APJC104P, 4P 100A 480 VAC PLUG**

Quantity: 20      Price: \$ \_\_\_\_\_ / each      Extended Cost: \$ \_\_\_\_\_

TOTAL AMOUNT OF BID: \_\_\_\_\_  
Numbers

IN WITNESS WHEREOF, BIDDER has hereunto executed this BID FORM this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
(Name of BIDDER)

\_\_\_\_\_  
(Signature of person signing this BID FORM)

\_\_\_\_\_  
(Printed name of person signing this BID FORM)

\_\_\_\_\_  
(Title of person signing this BID FORM)

STATE OF FLORIDA )  
 ) ss  
COUNTY OF \_\_\_\_\_ )

10. In the event that a conflict of interest is identified in the provision of services, I, on behalf of the above named entity, will immediately notify Seminole County in writing.

Title

**Attachment C**  
**Compliance with the Public Records Law**

Upon award recommendation or ten (10) days after opening, submittals become "public records" and shall be subject to public disclosure consistent with Chapter 119, Florida Statutes. Bidders must invoke the exemptions to disclosure provided by law in the response to the solicitation, and must identify the data or other materials to be protected, and must state the reasons why such exclusion from public disclosure is necessary. The submission of a bid authorizes release of your firm's credit data to Seminole County.

If the company submits information exempt from public disclosure, the company must identify with specificity which pages/paragraphs of their bid/bid package are exempt from the Public Records Act, identifying the specific exemption section that applies to each. The protected information must be submitted to the County in a separate envelope marked accordingly.

By submitting a response to this solicitation, the company agrees to defend the County in the event we are forced to litigate the public records status of the company's documents.

Company Name: \_\_\_\_\_

Authorized representative (printed): \_\_\_\_\_

Authorized representative (signature): \_\_\_\_\_

Date: \_\_\_\_\_

Project Number: Bid-2112-05/GMG

**THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR BID**

**Attachment D**  
**BIDDER'S CERTIFICATION**

I have carefully examined the Invitation for Bid, Instructions to Bidders, General and/or Special Conditions, Vendor's Notes, Specifications, proposed agreement and any other documents accompanying or made a part of this Bid Documents.

I hereby propose to furnish the goods or services specified in the Invitation for Bid at the prices, rates or discounts quoted in my bid. I agree that my submittal will remain firm for a period of up to ninety (90) days in order to allow the County adequate time to evaluate the bids.

I agree to abide by all conditions of this proposal and understand that a background investigation may be conducted by the Seminole County Sheriff's Department prior to award.

I certify that all information contained in this bid is truthful to the best of my knowledge and belief. I further certify that I am duly authorized to submit this bid on behalf of the vendor/contractor as its act and deed and that the vendor/contractor is ready, willing and able to perform if awarded the contract.

I further certify, under oath, that this bid is made without prior understanding, agreement, connection, discussion, or collusion with any other person, firm or corporation submitting a proposal for the same product or service; no officer, employee or agent of the Seminole County Government or of any other Bidder interested in said proposal; and that the undersigned executed this Bidder's Certification with full knowledge and understanding of the matters therein contained and was duly authorized to do so.

Name of Business

By:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name & Title, Typed or Printed

\_\_\_\_\_  
Mailing Address

\_\_\_\_\_  
City, State, Zip Code

( ) \_\_\_\_\_  
Telephone Number

Sworn to and subscribed before me

This \_\_\_\_\_ day of

\_\_\_\_\_  
20

\_\_\_\_\_  
Signature of Notary

Notary Public, State of \_\_\_\_\_

Personally Known

-OR-

Produced Identification \_\_\_\_\_

Type: \_\_\_\_\_

## Technical Specifications

# Cooper Wiring Devices: Technical Reference

## Included in This Section...

We've made it quick and easy to find the important industry and product data, dimensional representations, electrical codes, industry standards, relevant definitions, and general product references you're looking for.

Abbreviations Glossary .....	W-2	ANSI Architectural Symbols .....	W-15
Common Industry		NEMA Configurations:	
Organization Acronyms .....	W-3	· Straight Blade .....	W-16
Common UL and CSA Standards for		· Locking .....	W-17
Wiring Devices and Accessories .....	W-4	Horsepower Ratings	
General-Purpose Wiring Devices		for NEMA Configurations	
Definitions from NEMA standard WD-1 ..	W-5	for Plugs and Receptacles Only .....	W-18
Glossary of General		Wiring Diagrams .....	W-19-29
Electrical Terms .....	W-6-10	Diameter Ranges of Jacketed Cord	
Pin and Sleeve Products .....	W-11	in Accordance with Standard UL62 ...	W-30
Enclosure Types for		Metric Conversion Table .....	W-31
Nonhazardous Locations .....	W-12-13		
NEMA and IEC			
Enclosure Classifications .....	W-14		

For more information about any of the quality electrical products in Cooper Wiring Devices' extensive line, come see us at [www.cooperwiringdevices.com](http://www.cooperwiringdevices.com) and discover why, for the full range of needs, we're your No. 1 solution for wiring devices!

## W-1 TECHNICAL REFERENCE

## Abbreviations Glossary

Short listing of common abbreviations for organizations often referred to in the electrical industry, and also noted throughout Cooper Wiring Devices' catalog:

### **ANSI**

#### **American National Standards Institute, Inc.**

ANSI is a private, non-profit organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system. The Institute's mission is to enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems, and safeguarding their integrity.

### **CSA**

#### **Canadian Standards Association**

The Canadian Standards Association is a not-for-profit, membership-based association that conducts product safety testing, and issues certifications.

### **GSA**

#### **General Services Administration Federal Supply Service**

GSA's Federal Supply Service provides federal customers with a specific list of manufacturer's products that have been approved to meet stated requirements. The most frequently cited Federal Specifications regarding electrical wiring devices are those for Electrical Power Connector, Plug, Receptacle and Cable Outlet (Fed. Spec. W-C 596) and for Toggle and Lock, Flush Mounted Switches (Fed. Spec. W-S 896).

### **NEC®**

#### **National Electrical Code®**

Published by the NFPA (see listing) as NFPA 70, the National Electrical Code®

This publication, renewed every 3 years under the auspices of ANSI, provides for the adequate protection of life and property from dangers associated with the use of electricity. It is now adopted and enforced in all 50 states in the United States, and is also the basis for electrical codes in several other countries.

### **NEMA**

#### **National Electrical Manufacturers Association**

Comprised of electrical manufacturers, NEMA provides a forum for the standardization and testing of electrical equipment, enabling consumers to select from a range of safe, effective, and compatible electrical products. NEMA-standards of testing is frequently required by both government and third-party endorsees such as UL and CSA prior to their approval.

### **NFPA**

#### **National Fire Protection Association**

The mission of the international non-profit NFPA is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating scientifically based consensus codes and standards, research, training and education.

### **NOM**

#### **Normas Oficiales de Mexico**

(Official Mexican Standards)

The Official Mexican Standards (referred to as Normas or NOMs) augment the Mexican Hazardous Materials Land Transportation Regulation and provide information relative to importing and exporting hazardous materials from and to Mexico.

### **OSHA**

#### **Occupational Health and Safety Administration, U.S. Department of Labor**

OSHA's mission is to assure safe and healthful working conditions for working men and women (having been authorized to enforce standards first created under the Occupational Health and Safety Act of 1970 and since evolved), by assisting and encouraging the States in their efforts to assure safe and healthful working conditions.

### **UL**

#### **Underwriters Laboratories**

Underwriters Laboratories Inc. (UL) is an independent, not-for-profit product safety testing and certification organization.

# Common Industry Organization Acronyms

## Standards Development Organizations

<b>ANSI</b>	American National Standards Institute
<b>ASME</b>	American Society of Mechanical Engineers
<b>CANENA</b>	Consejo de Armonizacion de Normas Electrotecnicas de Norte America (Council for Harmonization of Electrotechnical Standardization of North America)
<b>IEC</b>	International Electrotechnical Commission
<b>IEEE</b>	Institute of Electrical and Electronics Engineers
<b>ISA</b>	Instrument Society of America
<b>ISO</b>	International Standards Organization
<b>NFPA</b>	National Fire Protection Agency
<b>SAE</b>	Society of Automotive Engineers
<b>SME</b>	Society of Manufacturing Engineers

## Codes and Standards

<b>CEC</b>	Canadian Electrical Code
<b>CEE</b>	European Electrotechnical Committee
<b>NEC</b>	National Electrical Code
<b>NMX</b>	Normas Mexicanas
<b>NOM</b>	Normas Oficiales de Mexicanas (Official Mexican Standard)

## Industry Associations

<b>ABYC</b>	American Boat and Yacht Council
<b>BICSI</b>	Building Industry Consulting Services International
<b>BOMA</b>	Building Owners Management Association
<b>CANAME</b>	Camara Nacional de Manufacturas Electricas (Mexico)
<b>CEMRA</b>	Canadian Electrical Manufacturers Representatives Association
<b>ECOC</b>	Electrical Contractors of Canada
<b>EFI</b>	Electro-Federation Incorporated
<b>EIA</b>	Electronics Industry Association
<b>EPRI</b>	Electric Power Research Institute
<b>IAEI</b>	International Association of Electrical Inspectors

<b>IBI</b>	Intelligent Building Institute
<b>IECA</b>	Independent Electrical Contractors Association
<b>IFMA</b>	International Facilities Management Association
<b>NAED</b>	National Association of Electrical Distributors
<b>NAW</b>	National Association of Wholesalers
<b>NECA</b>	National Electrical Contractors Association
<b>NEMA</b>	National Electrical Manufacturers Association
<b>NEMRA</b>	National Electrical Manufacturers Representative Association
<b>NMDA</b>	National Marine Distributor Association
<b>NMRA</b>	National Marine Representative Association
<b>SEMI</b>	Semi-Conductor Equipment and Material International
<b>TIA</b>	Telecommunications Industry Association

## Certification Agencies

<b>ANCE</b>	National Association of Normalization and Certification of the Electrical Sector (Mexico)
<b>BSI</b>	British Standards Institute
<b>CE</b>	European Compliance (This is not a certification agency, but CE is the European Compliance Mark)
<b>CSA</b>	Canadian Standards Association
<b>cUL</b>	Certified to CSA Standards by Underwriters Laboratories
<b>DESC</b>	Defense Electronic Supply Center
<b>ETL</b>	Electrical Testing Laboratories
<b>FCC</b>	Federal Communications Commission
<b>FM</b>	Factory Mutual
<b>IAPA</b>	Independent Accident and Protection Association (Canada)
<b>NRTL</b>	National Recognized Testing Laboratories
<b>OSHA</b>	Occupational Safety and Health Administration
<b>TUV</b>	TUV Rheinland of N.A., Inc.
<b>VDE</b>	Verband Deutscher Elektrotechniker (Germany)
<b>UL</b>	Underwriters Laboratories

**W-3**  
**TECHNICAL**  
**REFERENCE**

# Common UL and CSA Standards for Wiring Devices and Accessories

## UL Standards Pertaining to CWD Products

<b>UL20</b>	General-use switches
<b>UL50</b>	Enclosures for electrical equipment
<b>UL94</b>	Flammability testing for materials, plastic
<b>UL486E</b>	Equipment and wiring terminals
<b>UL496</b>	Lampholders
<b>UL498</b>	Plugs, connectors, receptacles, inlets, outlets
<b>UL498A</b>	Taps and adapters
<b>UL508</b>	Industrial equipment (including motor control switches)
<b>UL514A</b>	Metallic boxes/covers/wallplates
<b>UL514D</b>	Nonmetallic boxes/covers/wallplates
<b>UL817</b>	Cord sets
<b>UL943</b>	GFCIs
<b>UL1054</b>	Special use switches
<b>UL1363</b>	Temporary power taps
<b>UL1436</b>	Outlet circuit testers
<b>UL1449</b>	Surge suppression devices
<b>UL1472</b>	Dimmers
<b>UL1567</b>	Switches and receptacles used with AL wire
<b>UL1682&amp;</b>	
<b>UL1686</b>	Pin and sleeve devices
<b>UL1699</b>	Arc fault circuit interrupters
<b>UL1786</b>	Night-lights
<b>UL1863</b>	Communications circuit accessories
<b>UL1917</b>	Solid state fan speed control
<b>FSWC596</b>	Fed. Spec. receptacles
<b>FSWS896</b>	Fed. Spec. switches

## CSA Standards Pertaining to CWD Products

<b>C22.2 No. 0.17</b>	Polymeric materials
<b>C22.2 No. 12</b>	Night Lights
<b>C22.2 No. 42</b>	General-use receptacles, attachment plugs
<b>C22.2 No. 55</b>	Special-use switches
<b>C22.2 No. 111</b>	General-use switches
<b>C22.2 No. 144</b>	GFCI
<b>C22.2 No. 156</b>	Fan Speed Controls
<b>C22.2 No. 182.1</b>	Industrial-type, special-use attachment plugs, receptacles and connectors. Pin and sleeve devices
<b>C22.2 No. 182.2</b>	Industrial locking type
<b>C22.2 No. 184.1</b>	Dimmers

**W-4**  
TECHNICAL  
REFERENCE

# General-Purpose Wiring Devices

## Definitions from NEMA Standard WD-1

### NEMA Standards Pertaining to CWD Products (in accordance with NEMA standard WD-1)

#### **WD 1-1.01 Cord Connector**

A portable receptacle with means for attachment to a flexible cord, the cord connector is not intended for permanent mounting.  
**NEMA Standard 7-13-1967**

#### **WD 1-1.02 Grounded Conductor (System Ground)**

This is a usually current-carrying circuit conductor that's purposely connected to earth ground, and is identified as the white conductor.  
**NEMA Standard 7-13-1967**

#### **WD 1-1.03 Grounding Conductor (Equipment Ground)**

Unlike the System Ground version, this conductor connects non-current-carrying metallic equipment parts to earth ground, providing a specific path for fault current to ground. It can be bare or covered, in which case it is identified as the green conductor, or green with yellow stripes.  
**NEMA Standard 7-13-1967**

#### **WD 1-1.04 Lampholder**

Lampholders mechanically support an electric lamp, and electrically connect it to a circuit.  
**NEMA Standard 7-13-1967**

#### **WD 1-1.05 Male Base (Inlet)**

Designed for flush or surface mounting on an appliance or other equipment, male-based plugs serve to connect utilization equipment to a connector.  
**NEMA Standard 7-13-1967**

#### **WD 1-1.06 Outlet**

An outlet is a point on the wiring system at which current is taken to supply utilization equipment.  
**NEMA Standard 7-13-1967**

#### **WD 1-1.07 Plug**

The male blades of our plugs serve to connect the conductors of the attached, flexible cord with those of the female receptacle.  
**NEMA Standard 7-1-1967**

#### **WD 1-1.08 Polarization (Plugs and Receptacles)**

Polarization assures the correct positioning for proper mating of plugs and receptacles of the same rating.  
**NEMA Standard 7-1-1967**

#### **WD 1-1.09 Pole**

When used to designate plugs and receptacles, "pole" refers to a terminal that is connected to a regularly current-carrying circuit conductor. In switches, the number of poles indicates how many conductors are being controlled.  
**NEMA Standard 7-1-1967**

#### **WD 1-1.10 Receptacle**

This device features female contacts, and is installed primarily at an outlet or on equipment meant to establish electrical connection with an inserted plug.  
**NEMA Standard 7-1-1967**

#### **WD 1-1.11 Slant Symbol (/)**

As it applies to wiring device ratings, the "slant" line (/) indicates that there's more than one voltage potential present between different terminals of a wiring device.  
**NEMA Standard 7-1-1967**

#### **WD 1-1.12 SWITCH**

There are several different types of switches available for making, breaking, or changing electrical circuit connections, including:

**A. Single-Pole Switch** (Single-Pole, Single-Throw), which makes or breaks the connection of a single conductor.

**B. Double-Pole Switch** (Double-Pole, Single-Throw), which makes or breaks the connection of two conductors on a single branch circuit.

**C. Three-Way Switch** (Single-Pole, Double-Throw), which changes the connection of a single conductor and is most often utilized in tandem to better control one piece of equipment from two locations.

**D. Four-Way Switch** (Double-Pole, Double-Throw Reversing) is a double-pole switch used with two three-way switches to control a single piece of equipment from more than two locations.

**NEMA Standard 7-13-1967**

#### **WD 1-1.13 Terminal (on a Wiring Device)**

A terminal is a fixed location on a wiring device where a conductor is designated for connection.  
**NEMA Standard 7-13-1967**

#### **WD 1-1.14 Wire (Plugs and Receptacles)**

As it applies in designating plugs and receptacles, the term "wire" stands for the number of either regularly current-carrying or equipment grounding connected conductors.  
**NEMA Standard 7-13-1967**

For answers to technical questions, or for more information on UL, CSA, and NEMA standards pertaining to Cooper Wiring Devices' products, call 1-800-441-3177, Ext. 4800, or visit our website at [www.cooperwiringdevices.com](http://www.cooperwiringdevices.com).

**W-5**  
**TECHNICAL**  
**REFERENCE**

# Glossary of General Electrical Terms

## A

**AC (Alternating Current)** – Current that reverses direction in a circuit at regular intervals, such as common house current.

**AC-DC** – An electrical wiring device intended for either alternating current (AC) or direct current (DC).

**AC Only** – An electrical wiring device intended for use on alternating current (AC) only.

**Adapter** – An item used to convert or match devices that do not mate under normal circumstances. Also, a device that enables any and all of the following: a) different sizes or types of plugs to fit into a telecommunications outlet/connector; b) the rearrangement of leads; c) large cables with numerous wires to fan out into smaller groups of wires; d) interconnection between cables.

**AL/CU** – Identifies an electrical wiring device as suitable for use with either aluminum or copper conductors. See also CO/ALR.

**Ampacity** – The current-carrying capacity of conductors expressed in amperes.

**Ampere** – Unit used in measuring electrical current. Abbreviation: Amp.

**Angle Plug** – A plug designed to allow the cord to exit at a right angle to the plug face.

**ANSI** – American National Standards Institute.

**Automatic Grounding** – A component that provides automatic grounding of an electrical wiring device when installed in a grounded metal enclosure. Eliminates the need for a bonding jumper.

## B

**Backwire Terminal** – A termination that can be accomplished by inserting a pre-stripped solid or stranded conductor into a wiring device terminal opening, followed by tightening the adjacent terminal screw.

**Ballast** – A device used for energizing fluorescent lamps.

**Bi-Pin** – Fluorescent lamp ends consisting of two-pin contacts.

**Bonding** – The process of connecting metal components of an electrical system to form a continuous conducting path.

**Bonding Jumper** – The use of a separate conductor to tie a wiring device grounding terminal to building ground.

**Boot** – Protective covering over a cable, wire or connector in addition to the normal jacketing or insulation.

**Branch Circuit** – One of many separate circuits distributing electricity throughout a building from the distribution panel.

## C

**Cable** – An insulated electrical conductor.

**Cable Assembly** – Typically, the cable and associated connectors, ready to install.

**Candelabra** – A small screw base lampholder similar in size to a night light bulb.

**Capacitor** – An electronic component primarily used to reduce noise.

**CAD/CAM** – Computer Aided Design and Computer Aided Manufacturing system used by Eagle Electric.

**Category 3** – Products which support frequency transmissions up to 16MHz for voice and up to 10Mbps for data.

**Category 5 (enhanced)** – Products which must support frequency transmissions up to 100MHz (voice/data) and 1000 Mbps for data transmissions.

**CATV** – Cable television.

**Circuit** – Two or more wires providing a path for current to flow from a source to a device.

**Clock Hanger** – A flush mount recessed single receptacle with integral wallplate hook to mount an electric wall clock.

**Clamping Voltage** – The voltage level a surge suppressor allows through before activating.

**CO/ALR** – An electrical wiring device suitable for use with either aluminum or copper conductors. See also AL/CU.

**Coaxial Cable** – A shielded cable with a center conductor commonly used for cable television signal transmission.

**Coaxial Connector** – A connector that has a coaxial construction and is used with coaxial cable.

**Combination Wallplates** – A multiple gang wallplate with varying wiring device openings.

**Combination Devices** – A wiring device containing two or three devices per common housing.

**Compact Fluorescent Lamp (CFL)** – A highly efficient, medium-based socket fluorescent lamp that typically has self-contained starter and ballast as part of its assemblage.

**Cord Connector** – A receptacle designed for attachment to a flexible cord.

**Corrosion Resistant Devices** – Constructed of materials specifically engineered to resist elements of corrosive environments found in certain commercial, industrial and marine applications. Typically accomplished by use of specially selected materials and/or metal plating.

**CSA (Canadian Standards Association)** – An organization that sets standards of performance for electrical products used in Canada.

**Cube Tap** – An adapter that converts a single receptacle to multiple outlets.

**cUL** – UL certification to CSA requirements.

**Current** – The volume of electricity flowing through a conductor, measured in amps.

**Current Tap** – An adapter device designed for accessing power (through either an existing receptacle or a medium base lampholder), with female connective opening(s) for additional plug blade insertion.

## D

**DC (Direct Current)** – Current that flows only in one direction through a circuit.

**Dimmer** – A switch with electronic components that permits variable control of lighting intensity.

**Double Contact Recessed** – A fluorescent lampholder having two recessed contacts.

# Glossary of General Electrical Terms

**Double Pole Switch** – A switch that controls two poles simultaneously from one location.

**Double Pole, Double Throw (DPDT)** – A double pole switch with a center off position that permits the control of two separate loads on each pole.

**Duplex Receptacle** – Two receptacles in a single gang.

**Dual Voltage Receptacle** – A duplex receptacle capable of delivering different voltages to each opening.

**Dust Proof** – A classification of a device and/or enclosure with design considerations for preventing accumulative dust contamination of internal parts.

## E

**Edison Base** – (Also known as Medium base.) Threaded base of lampholder commonly found on standard incandescent lamps.

**EIA** – Electronics Industry Association.

**Electroliner** – Threaded base of lampholder smaller than those found on standard lamps.

**EMI** – Electromagnetic interference.

**Explosion Proof** – A classification of a device and/or enclosure with design considerations for preventing an electrical arc from causing ignition of a specific hazardous atmosphere.

## F

**FCC** – Federal Communications Commission.

**Feed-Through** – A wiring method that feeds power from the branch circuit, through individual devices, to provide continuous power downstream.

**Fed Spec (Federal Specification)** – A performance standard outlined by the General Services Administration (GSA) and tested by UL.

**Flanged Inlet** – A device allowing electrical input via a flush mounted recessed plug.

**Flanged Outlet** – A device allowing electrical output via a flush mounted recessed receptacle.

**Floating Installation** – The installation of a wiring device where the mounting strap does not make contact with the wall surface. (see NEC® article 380-10(b)).

**Fluorescent Lamp** – Lamp relying on the use of an electrode and inert gas as means of illumination.

**Fluorescent Starter** – A device that provides a high-voltage pulse to start a fluorescent lamp.

**Flush Mounted** – A term used to describe anything whose upper surface (or face), when installed, is relatively flush with the surface to which it was installed.

**Four-Way Switch** – A switch used in multiple combinations to control a light from three or more locations.

**Full Protection** – A surge suppressor that provides protection in all three modes: Hot to neutral, neutral to ground and hot to ground.

**Fuse** – An overcurrent device designed to interrupt current in the event of an overload or dead short.

## G

**Gang** – The space required for one wiring device.

**GFCI (Ground Fault Circuit Interrupter)** – A personal protection device that detects current leakage to ground and interrupts power.

**Ground Conductor** – A conductor that provides a safe path to ground for fault current.

**GSA (General Services Administration)** – Government administration responsible for the approval of Federal Specifications.

## H

**Harness** – An arrangement of wires and cables, usually with many breakouts, which have been tied together or pulled into a rubber or plastic sheath.

**Hot** – Term used to define a live circuit. Also refers to the black or red conductor coming from the source in a branch circuit.

**Horsepower Rated** – Rating that indicates a device's ability to switch or conduct motor loads.

**Hospital Grade** – A receptacle standard outlined in UL 498 intended to meet special performance requirements certifying them for use in hospitals.

## I

**IEEE** – Institute of Electrical and Electronic Engineers.

**Impact Tool** – Device used to punch new conductor onto insulation displacement terminals. This tool is typically equipped with a cutting blade for either 66 or 110 blocks.

**Incandescent** – Lamp relying on the use of a filament, usually tungsten, as its means of illumination, such as a common household light bulb.

**Insertion Tool** – A small hand-held tool used to insert contacts into a connector.

**Insulation** – Protective jacket of electrical conductors.

**Interchangeable** – A line of wiring devices with common housings intended to be mounted on a single mounting strap allowing up to three devices per gang.

**Interconnect** – A connection scheme that provides for the direct connection of individual cables to another cable or to an equipment cable without a patch cord.

**Interconnecting Cable** – The cable between modules, between units, or the larger portions of a system.

**Intermediate Base** – A screw base lamp and/or holder sized between candelabra and Edison base.

**Isolated Ground** – A grounding conductor separate from common building ground. Used in computer applications to eliminate EMI and RFI noise commonly found on building ground systems.

**W-7**  
TECHNICAL  
REFERENCE

# Glossary of General Electrical Terms

## J

**Jacket** – An outer protective sheath over primary insulation, braids, shields, cable components. Also, in fiber optics, a covering, over a fiber bundle of fibers, or cable which protects against the environment.

**Joules** – A measurement of energy commonly used to rate surge suppression performance.

**Jumper** – An assembly of twisted pairs without connectors, used to join telecommunications circuit/links at the cross connect.

**Junction** – A point in a circuit where two or more wires are connected.

## K

**Kilowatt** – Unit of electrical power equal to 1,000 watts. Abbreviation: KW.

**Key** – A lampholder with a means of switching the lamp on or off as part of the device.

**Keying** – The mechanical feature of a connector system that guarantees correct orientation of a connection.

**Keyless** – A lampholder with no means of switching the light on or off at the lampholder.

## L

**Lacing and Harnessing** – A method of grouping wires by securing them in bundles of designated patterns.

**Lampholder** – A device with contacts that makes electrical connection to the base of a supported lamp.

**Lampholder Adapters** – A variety of devices designed for accessing power through a medium base lampholder, that may contain either female connective opening(s) for plug blade insertion, additional (double) lampholders, or a combination of both. A type of current tap.

**Lighted** – A switch with an integral neon bulb that glows when the switch is in the "OFF" position. Also, a receptacle face that glows via an integral neon bulb indicating a live circuit.

**Listed** – Equipment acceptable to an authority having jurisdiction, that maintains periodic inspection of production, and whose listing states either that the equipment or materials meets appropriate standards, or has been tested and found suitable for use in a specified manner.

**Local Area Network (LAN)** – A geographically limited communications network intended for the local transport of data, video and voice.

**Locking** – A plug, connector or receptacle with curved blades or contacts which, when mated, can be rotated locking them together.

**Locking Switch** – A switch with a separate actuator key, rather than a toggle, to prevent unauthorized use.

**Low Voltage** – A device designed for use under 50 volts.

**"L" Rated** – A switch for tungsten filament lamps in AC circuits only.

## M

**Maintained Contact Switch** – A switch that stays in a given position unless manually actuated.

**Manual Controller** – A switch used for the operation of small AC or DC motors.

**Maximum (peak) Surge Current** – The peak surge current a surge protection device can withstand and remain functioning, based upon specific test criteria.

**Medium Base** – (Also known as Edison base.) Threaded base of lampholder commonly found on standard lamps.

**Mid-size** – Reference to a type of wallplate, where 0.375" (9.525mm) is added beyond NEMA standard size wallplate dimensions for length and width, to aid in covering large wallboard gaps or other surface irregularities.

**Miniature** – The smallest screw-in base for a lampholder or bulb.

**Modular Plug** – A telecommunications connector for wire or cords per the FCC part 68 Rules. A modular plug can have 6 or 8 contact positions but not all the positions need be equipped with contacts.

**Mogul** – The largest screw-in lampholder and lamp base.

**Momentary Contact** – A switch that automatically returns to the "OFF" position after manual pressure is released.

**M.O.V.** – Metal Oxide Varistor, primary component of TVSS.

**Multi-gang** – Typically refers to a wallplate that covers more than one gang's opening.

## N

**Nanosecond** –  $1 \times 10^{-9} = .000,000,001$ . (One billionth of a second.) Used to measure duration of response time for surge suppressors.

**NEMA Type 3R Enclosures** – Intended for outdoor use, these enclosures must protect contents from rain, ice, sleet.

## O

**Ohm** – The unit of measurement for electrical resistance.

**Olin Brass** – A type of heat-treated copper alloy with properties superior to brass.

**Oversize** – Reference to a type of wallplate, where 0.750" (19.05mm) is added beyond NEMA standard size wallplate dimensions for length and width, to aid in covering large wallboard gaps or other surface irregularities.

**Outlet Box, Telecommunications** – A metallic or nonmetallic box mounted within a wall, floor, or ceiling and used to hold telecommunications outlet/connectors or transition devices.

**Outlet/Connector, Telecommunications** – A connecting device in the work area on which horizontal cable terminates.

# Glossary of General Electrical Terms

## P

**Patch Cord** – A length of cable with connectors on one or both ends used to join telecommunications links/circuits at the cross-connect.

**Patch Cord Cable** – Bulk cable used in the manufacture of patch cords.

**Patch Panel** – A cross-connect system of mateable connectors that facilitates administration of the structured cabling system.

**Peak Current** – The short-duration peak current rating of a surge protector device.

**Pendant** – Type of enclosed switch or switches designed for installation at the end of a flexible cord or cable.

**Pilot Light** – A switch with an integral neon lamp that glows when the switch is in the "ON" position.

**Plug** – A device to initiate the flow of power to an attached flexible cord.

**Polarization** – A mating of plugs and connectors/receptacles to insure correct polarity.

**Pole** – A current-carrying conductor.

**Premise Wiring** – A particular building's data, telephone, video, and/or electronic wiring system.

**Preset** – A feature in a dimmer that allows the on/off switching of the light without changing the light output level.

**Prewiring** – Wiring installed before walls are enclosed or finished in anticipation of future use or need.

**Pull Switch** – A switch actuation by pulling a string or chain.

**Push Button** – A switch function actuated by pressure applied to a button.

**Push-In Terminal** – A termination that can be accomplished by inserting a pre-stripped, solid conductor into a wiring device terminal opening.

## R

**Receptacle** – An outlet that allows access to the power of an electrical circuit.

**Response time** – The interval time required for a device to perform its stated function in reaction to specific condition(s), such as a transient voltage surge or ground fault.

**RFI (Radio Frequency Interference)** – Electrical noise generated by radio waves.

**Rotary** – A switch mechanism that functions in a rotational manner to either simply make/break contact, or in the case of a dimmer switch to increase or decrease lighting level.

## S

**Sectional** – Individual-section wallplate components with different openings (or a blank surface), used to custom assemble a multi-gang wallplate.

**Series Circuit** – A circuit in which the components are arranged end to end to form a single path for current.

**Side Wire Terminal** – A termination that can be accomplished by a 3/4 turn looping pre-stripped solid or stranded conductor under terminal screws.

**Single Pole** – A switch that controls the connection of one circuit to one load.

**Single Pole, Double Throw (SPDT)** – A switch that controls the connection of one circuit to either one of two loads.

**Single Pole, Single Throw (SPST)** – A switch that controls the connection of one circuit to one load.

**Single Receptacle** – A receptacle that accepts only one plug.

**Slide** – Typically referred to in dimmer switch and fan speed control devices, whereby load level is controlled by means of a laterally moving, "sliding" mechanism.

**Snap-In** – A device with side spring clips used to secure it in position.

**Split Circuit** – Typically referred to whereby a duplex receptacle is provided with break-off tabs that enable the separate wiring of each outlet.

**Straight Blade** – A plug, connector, receptacle or flanged inlet whose blades are straight, with no locking features.

**Stranded** – A number of solid wires twisted together to form a single conductor.

**Structured Cabling System** – Also known as Category 5 Network Cabling (See definition and diagram in the introduction to Section H, Premise Wiring Devices)

**Surface-Mounted** – A wiring device designed to be installed on the surface of a wall or equipment.

**Surge** – A temporary and relatively large increase in the voltage or current in an electric circuit or cable.

**Surge-Suppression** – A means of absorbing voltage spikes or surges.

**Switch** – A device that may connect, disconnect or change a connected electrical circuit.

## T

**"T" Rated Switch** – A switch for tungsten filament lamps for both AC and DC current.

**Telecommunications** – The communication of information over some distance including interbuilding and intrabuilding distances.

**Tamper-Resistant Devices** – A classification of a device with design considerations for preventing improper access to energized parts of the device, typically the contacts of a receptacle.

**Terminal** – a) a location on a wiring device where a conductor is intended to be connected, b) a point which information may enter or leave a communications network; c) the input-output associated equipment, or d) a device by means of which wires may be connected to each other.

**Three Position Center "OFF" Switch** – A two-circuit, three position switch in which the "OFF" position is the center position of the toggle or rocker.

**Three-Way Switch** – A switch that is used in pairs to control one load from two locations.

**Time Delay** – A switch with an integral mechanism or electronic function that automatically turns off load at a predetermined time.

## W-9 TECHNICAL REFERENCE

## Glossary of General Electrical Terms

**Timer** – A switch with an integral mechanism or electronic function that automatically turns load on or off at a predetermined time(s).

**TIA** – Telecommunications Industry Association.

**Toggle** – A lever-type actuator that makes/breaks switch contact when moved.

**Top Wire Lampholder** – A ceiling lampholder with terminals fully accessible from top of device.

**Transient Voltage Surge** – A high-speed, high-energy electrical disturbance generated by utility switching, motor load switching and/or lightning strike on AC power lines, as well as data and communication lines.

**Transient Voltage Surge Suppressor (TVSS)** – A device designed to protect sensitive electronic equipment from the harmful effects of transient voltage surges having entered the power line to which it is connected.

**Two-Piece Lampholder** – A ceiling lampholder with terminals accessible only by removal of interior.

**TVSS** – Transient Voltage Surge Suppressor.

### U

**UL** – Underwriters Laboratories, Inc.

**UL Listed** – Term identifying a wiring device that has been successfully tested and listed according to the standards established by Underwriters Laboratories.

**UL Recognized** – Term identifying a wiring device that has been tested and listed as a component according to the standards established by Underwriters Laboratories.

### V

**Varistor** – An electrical resistor whose resistance depends on the applied voltage. Used in surge protection devices.

**Voltage** – The electric pressure available to cause the flow of electricity.

### W

**Wallplate** – A finished, rigid cover that closes the front of a wall-mounted electrical device box, either with or without an electrical device having been installed.

**Watertight** – A classification of a device and/or enclosure with design considerations for preventing water from entering under specific conditions.

**Watt** – Unit of measurement for electrical consumption or output commonly used in standard household lamps. Formula: watts ÷ volts = amps. Example: 100 watt light bulb at 125 volts = .80 amps of consumption.

**Weatherproof** – A classification of a device and/or enclosure with design considerations for preventing degradation from exposure to specific weather elements and conditions.

**Wet Location; Only with Cover Closed** – UL Listing for weather protective covers to be used in damp locations, or wet locations only when the cover is closed.

**Wet Location; With Cover Open** – UL Listing for weather protective covers permitted for use in wet and damp locations while the electrical device is in use.

**Wire** – A single bare or insulated metallic conductor having solid or stranded construction that is designed to carry current in an electric circuit.

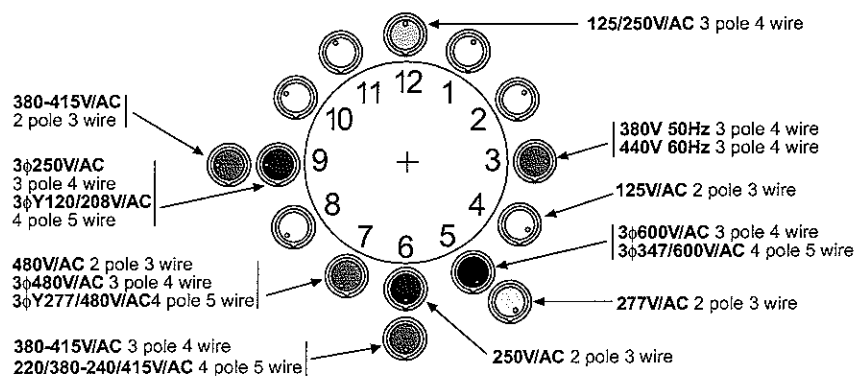
**Wire Gauge** – A system of numerical designation of wire sizes.

**Work Area (Work Station)** – A building space where the occupants interact with telecommunications terminal equipment.

## Pin and Sleeve Products

A clock face is used to represent the grounding contact position for all female connectors and receptacles. With the keyway at the bottom, the female grounding contact will appear at one of the twelve hour positions.

To identify the system voltage, identify the housing color and hour location of the connector or receptacle grounding outlet.



## W-11 TECHNICAL REFERENCE

We've made our catalog number ordering system as easy to use as our products! Simply follow the six-part "code":

### Catalog Number Coding

CW Prefix	4 1st digit	20 2nd-4th digit	R 1st letter	7 Last digit	W Last letter
CW = Cooper Wiring	3 = 3 wire	16 = 16 Amp	P = Plug	Clock position of female grounding contact	W = Watertight
	4 = 4 wire	20 = 20 Amp	C = Connector		
	5 = 5 wire	30 = 30 Amp	R = Receptacle		
		32 = 32 Amp	B = Inlet		
		60 = 60 Amp	MI = Mechanical Interlock		
		63 = 63 Amp			
		100 = 100 Amp	MIF = Fused Mechanical Interlock		
		125 = 125 Amp			

# Enclosure Types for Nonhazardous Locations

## NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

NEMA Standards Publication No. 250-1991  
Enclosures for Electrical Equipment  
(1000V max)

Type Designation	Intended Use and Description
	An enclosure is a surrounding case that provides personnel with protection against incidental contact with enclosed equipment, and simultaneously protects enclosed equipment against specific environmental conditions.
<b>Type 1</b>	Enclosures are intended for indoor use primarily to protect against limited amounts of dirt.
<b>Type 2</b>	Enclosures provide a degree of protection, mainly indoors, against limited amounts of water or dirt.
<b>Type 3</b>	Enclosures, intended primarily for use outdoors, protect against rain, sleet, wind-blown dust, and damage from external ice formation.
<b>Type 3R</b>	Enclosures provide protection primarily against rain, sleet, and damage from external ice formation.
<b>Type 3S</b>	Enclosures protect primarily against rain, sleet, and wind-blown dust, and enable external mechanisms to operate efficiently even when ice laden.
<b>Type 4</b>	Enclosures provide protection, both indoors and out, against wind-blown dust and rain, splashing or hose-directed water, and ice damage.
<b>Type 4X</b>	Enclosures used both indoors and out to protect against corrosion, wind-blown dust and rain, splashing or hose-directed water, and damage caused by exterior ice formation.

## UNDERWRITERS LABORATORIES UL50

Standard for Enclosures for Electrical  
Equipment (10th Edition)

Type Designation	Intended Use and Description
	An enclosure is a surrounding case that protects equipment enclosed within against incidental contact, as well as specific environmental conditions. A complete enclosure shall be provided for all live parts that may be housed in it. Such an enclosure shall be tight and come with a means for mounting, unless it's designed for a special installation, for example, a cast metal junction or pull-box intended for installation in poured concrete.
<b>Type 1</b>	Enclosures are intended for indoor use primarily to protect against limited amounts of falling dirt.
<b>Type 2</b>	Enclosures provide a degree of protection, mainly indoors, against limited amounts of water or dirt.
<b>Type 3</b>	Enclosures, intended primarily for use outdoors, protect against rain, sleet, wind-blown dust, and damage from external ice formation.
<b>Type 3R</b>	Used primarily outdoors for protection against rain, sleet, and exterior damage caused by the formation of ice.
<b>Type 3S</b>	Used primarily outdoors for protection against rain, sleet, and wind-blown dust, and to enable exterior mechanisms to operate when ice laden.
<b>Type 4</b>	For indoor and outdoor use to protect against wind-blown dust and rain, splashing or hose-directed water, and damage caused by exterior ice formation.
<b>Type 4X</b>	For protection indoors and out from corrosion, wind-blown dust and rain, splashing or hose-directed water, and damage caused by exterior ice formation.

## CANADIAN STANDARDS ASSOCIATION

CAN/CSA C22.2 No. 94-M91  
Special Purposes Enclosures

Type Designation	Intended Use and Description
	Enclosures are constructed to protect against specific environmental conditions, as well as accidental contact with the equipment enclosed within.
<b>Type 1</b>	(There is no CSA equivalent.)
<b>Type 2</b>	Enclosures are designed to provide protection, primarily indoors, against dripping and small amounts of splashing of noncorrosive liquids, and dirt.
<b>Type 3</b>	Enclosures, designed for both indoor and outdoor use, protect against rain and snow, and remain undamaged by the external formation of ice.
<b>Type 3R</b>	Enclosures used both indoors and out for protection against rain and snow, remaining undamaged by exterior ice formation.
<b>Type 3S</b>	Enclosures used both indoors and out for protection against rain, snow, and airborne dust, and enable external mechanisms to operate efficiently even when ice laden.
<b>Type 4</b>	Enclosures used both indoors and out for protection against rain, snow, airborne dust, and both splashing and hose-directed water, remaining undamaged by exterior ice formation.
<b>Type 4X</b>	Enclosures used both indoors and out for protection against rain, snow, airborne dust, and both splashing and hose-directed water, remaining undamaged by exterior ice formation.

## W-12

### TECHNICAL REFERENCE

# Enclosure Types for Nonhazardous Locations

## NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

NEMA Standards Publication No. 250-1991  
Enclosures for Electrical Equipment  
(1000V max)

Type Designation	Intended Use and Description
<b>Type 5</b>	Enclosures used primarily indoors to provide protection against airborne dust and dirt, and noncorrosive liquids.
<b>Type 6</b>	Enclosures provide protection both indoors and out against hose-directed water, water entry during occasional short-term submersion at low-pressure depths, and damage caused by exterior ice formation.
<b>Type 6P</b>	Enclosures protect both indoors and out against hose-directed water, water entry during long-term submersion at low-pressure depths, and ice damage.
<b>Type 12</b>	Enclosures used primarily indoors to protect against airborne dust or dirt, and noncorrosive liquids.
<b>Type 12K</b>	Enclosures with knockouts are used primarily indoors for protection against airborne dust and dirt, and noncorrosive liquids.
<b>Type 13</b>	Enclosures used primarily indoors to protect against dust, as well as accidental spraying by water, oil, or noncorrosive coolants.

## UNDERWRITERS LABORATORIES UL50

Standard for Enclosures for Electrical Equipment (10th Edition)

Type Designation	Intended Use and Description
<b>Type 5</b>	Used primarily indoors for protection against airborne dust or dirt, and noncorrosive liquids.
<b>Type 6</b>	For protection indoors and out against hose-directed water, water entry during occasional short-term submersion at low-pressure depths, and damage caused by exterior ice formation.
<b>Type 6P</b>	For protection indoors and out against hose-directed water, water entry during long-term submersion at low-pressure depths, and damage caused by exterior ice formation.
<b>Type 12</b>	Used primarily indoors to protect against airborne dust and dirt, and noncorrosive liquids.
<b>Type 12K</b>	Used primarily indoors to protect against dust and dirt, and noncorrosive liquids.
<b>Type 13</b>	Used primarily indoors to protect against dust, as well as accidental spraying by water, oil, or non-corrosive coolants.

## CANADIAN STANDARDS ASSOCIATION

CAN/CSA C22.2 No. 94-M91  
Special Purposes Enclosures

Type Designation	Intended Use and Description
<b>Type 5</b>	Enclosures exclusively for indoor use, providing protection against dripping and light splashing of noncorrosive liquids, as well as airborne dust, lint, fibers, and filings.
<b>Type 6</b>	Enclosures used both indoors and out for protection against water entry during occasional short-term submersion at low-pressure depths, remaining undamaged by exterior ice formation.
<b>Type 6P</b>	Enclosures for use both indoors and out for protection against water entry during long-term submersion at low-pressure depths. In addition, it provides corrosion resistance over extended periods of time and remains undamaged by exterior ice formation.
<b>Type 12</b>	Enclosures exclusively for indoor use, providing protection against airborne dust, lint, fibers, and filings, as well as dripping and light splashing of noncorrosive liquids. These enclosures are not provided with knockouts.
<b>Type 12K</b>	Enclosures provided with knockouts and used exclusively indoors for protection against airborne dust, lint, fibers, and filings, as well as dripping and light splashing of noncorrosive liquids.
<b>Type 13</b>	Enclosures exclusively for indoor use, providing protection against airborne dust, lint, fibers, and filings, as well as from seepage and spraying of noncorrosive liquids, including oils and coolants.

## W-13 TECHNICAL REFERENCE

# NEMA and IEC Enclosure Classifications

## Comparing NEMA Enclosure Type Numbers and IEC Enclosure Classification Designations (IP Suitability Rating)

### IEC

IEC Publication 529, "Classification of Degrees of Protection Provided by Enclosures," defines the IP (Ingress Protection) Suitability Rating as a system for classifying the level of protection provided by enclosures of electrical equipment. The higher the rating, the greater the degree of protection provided by the enclosure. The initial numeral of the code indicates the level of protection for persons against access to hazardous parts within the enclosure and/or the ingress of solid foreign objects. The second numeral indicates the level of protection afforded equipment within enclosures against water.

The IP Suitability Rating, as defined by IEC 529, does not specify any degree of protection provided against mechanical damage of equipment, risk of explosions, or conditions such as moisture (i.e., condensation), corrosive vapors, fungi, or vermin.

### NEMA

NEMA Standards Publication 250 defines the NEMA Enclosure Type Numbers. Unlike the IEC Enclosure Classification Designations, NEMA Standards Publication 250 does tests for environmental conditions such as corrosion, rust, icing, oil, and coolants. For this reason, and because the tests and evaluations for other characteristics are not identical, the IEC Enclosure Classification Designations cannot be exactly equated with NEMA Enclosure Type Numbers.

The table below provides an equivalent conversion from NEMA Enclosure Type Numbers to IEC Enclosure Classification Designations. Be aware that NEMA Types meet or exceed test requirements for the associated IEC Classifications. Therefore, this table cannot be used to convert from IEC Classifications to NEMA Types.

### Converting NEMA Type Numbers to IEC Classification Designations

(NOTE: This table cannot be used to convert IEC classification designations to NEMA type numbers.)

NEMA Enclosure Type Number	Equivalent IEC Enclosure Classification Designation
1	IP10
2	IP11
3	IP54
3R	IP14
3S	IP54
4 and 4X	IP56
5	IP52
6 and 6P	IP67
12 and 12K	IP52
13	IP54

# ANSI Architectural Symbols

## 1. Lighting Outlets

	Ceiling	Wall
1.1	Surface or pendant incandescent, mercury vapor, or similar lamp fixture 	
1.2	Recessed incandescent, mercury vapor, or similar lamp fixture 	
1.3	Surface or pendant individual fluorescent fixture 	
1.4	Recessed individual fluorescent fixture 	
1.5	Surface or pendant continuous row fluorescent fixture 	
1.6	Recessed continuous row fluorescent fixture 	
1.7	Bare-lamp fluorescent strip 	
1.8	Surface or pendant exit light 	
1.9	Recessed exit light 	
1.10	Blanket outlet 	
1.11	Junction box 	
1.12	Outlet controlled by low-voltage switching when relay is installed in outlet box 	

## 2. Receptacle Outlets

	Grounded	Ungrounded
2.1	Single receptacle outlet 	
2.2	Duplex receptacle outlet 	
2.3	Triplex receptacle outlet 	
2.4	Quadruplex receptacle outlet 	
2.5	Duplex receptacle outlet – split wired 	
2.6	Triplex receptacle outlet – split wired 	
2.7	Single special-purpose receptacle outlet 	
2.8	Duplex special-purpose receptacle outlet 	
2.9	Range outlet (typical) 	
2.10	Special-purpose connection or provision for connection 	

	Grounded	Ungrounded
2.11	Multioutlet assembly 	
2.12	Clock hanger receptacle 	
2.13	Fan hanger receptacle 	
2.14	Floor single receptacle outlet 	
2.15	Floor duplex receptacle outlet 	
2.16	Floor special-purpose outlet 	

## 3. Switch Outlets

3.1	Single-pole switch <b>S</b>
3.2	Double-pole switch <b>S<sub>2</sub></b>
3.3	Three-way switch <b>S<sub>3</sub></b>
3.4	Four-way switch <b>S<sub>4</sub></b>
3.5	Key-operated switch <b>SK</b>
3.6	Switch and pilot lamp <b>SP</b>
3.7	Switch for low-voltage switching system <b>SL</b>
3.8	Master switch for low-voltage switching system <b>SLM</b>
3.9	Switch and single receptacle
3.10	Switch and double receptacle
3.11	Door switch <b>S<sub>D</sub></b>
3.12	Time switch <b>ST</b>
3.13	Circuit breaker switch <b>SCB</b>
3.14	Momentary contact switch or push-button for other than signaling system <b>SMC</b>
3.15	Ceiling pull switch <b>(S)</b>

## 4. Residential Occupancies




















































































4.1	Push-button
4.2	Buzzer
4.3	Bell
4.4	Combination bell-buzzer
4.5	Chime
4.6	Annunciator

For more information on Cooper Wiring Devices' entire line of high-quality products, visit our website at [www.cooperwiringdevices.com](http://www.cooperwiringdevices.com).

**W-15**  
TECHNICAL  
REFERENCE

# NEMA Straight Blade Configurations























































































NEMA Configurations for General-Purpose Nonlocking Plugs and Receptacles

Wiring/Voltage		15 Ampere		20 Ampere		30 Ampere		50 Ampere		60 Ampere	
		Receptacle	Plug	Receptacle	Plug	Receptacle	Plug	Receptacle	Plug	Receptacle	Plug
2 Pole 2 Wire	125V 1	1-15R 	1-15P 								
	250V 2		2-15P 	2-20R 	2-20P 	2-30R 	2-30P 				
	277V/AC 3				RESERVED FOR FUTURE CONFIGURATIONS						
	600V 4				RESERVED FOR FUTURE CONFIGURATIONS						
2 Pole 3 Wire Grounding	125V 5	5-15R 	5-15P 	5-20R 	5-20P 	5-30R 	5-30P 	5-50R 	5-50P 		
	250V 6	6-15R 	6-15P 	6-20R 	6-20P 	6-30R 	6-30P 	6-50R 	6-50P 		
	277V/AC 7	7-15R 	7-15P 	7-20R 	7-20P 	7-30P 	7-30P 	7-50R 	7-50P 		
	347V/AC 24	24-15R 	24-15P 	24-20R 	24-20P 	24-30R 	24-30P 	24-50R 	24-50P 		
	480V/AC 8				RESERVED FOR FUTURE CONFIGURATIONS						
	600V/AC 9				RESERVED FOR FUTURE CONFIGURATIONS						
3 Pole 3 Wire	125/250V 10			10-20R 	10-20P 	10-30R 	10-30P 	10-50R 	10-50P 		
	3Ø 250V 11	11-15R 	11-15P 	11-20R 	11-20P 	11-30R 	11-30P 	11-50R 	11-50P 		
	3Ø 480V 12				RESERVED FOR FUTURE CONFIGURATIONS						
	3Ø 600V 13				RESERVED FOR FUTURE CONFIGURATIONS						
3 Pole 4 Wire Grounding	125/250V 14	14-15R 	14-15P 	14-20R 	14-20P 	14-30R 	14-30P 	14-50R 	14-50P 	14-60R 	14-60P 
	3Ø 250V 15	15-15R 	15-15P 	15-20R 	15-20P 	15-30R 	15-30P 	15-50R 	15-50P 	15-60R 	15-60P 
	3Ø 480V 16				RESERVED FOR FUTURE CONFIGURATIONS						
	3Ø 600V 17				RESERVED FOR FUTURE CONFIGURATIONS						
4 Pole 4 Wire	3ØY 18 120/208V	18-15R 	18-15P 	18-20R 	18-20P 	18-30R 	18-30P 	18-50R 	18-50P 	18-60R 	18-60P 
	3ØY 19 277/480V				RESERVED FOR FUTURE CONFIGURATIONS						
	3ØY 20 347/600V				RESERVED FOR FUTURE CONFIGURATIONS						
	3ØY 21 120/208V				RESERVED FOR FUTURE CONFIGURATIONS						
4 Pole 5 Wire Grounding	3ØY 22 277/408V				RESERVED FOR FUTURE CONFIGURATIONS						
	3ØY 23 347/600V				RESERVED FOR FUTURE CONFIGURATIONS						

**W-16**  
TECHNICAL  
REFERENCE

# NEMA Locking Configurations

NEMA Configurations for Locking-Type Plugs and Receptacles

Wiring/Voltage			15 Ampere		20 Ampere		30 Ampere	
			Receptacle	Plug	Receptacle	Plug	Receptacle	Plug
2 Pole 2 Wire	125V	L1	L1-15R 	L1-15P 				
	250V	L2			L2-20R 	L2-20P 		
	277V/AC	L3			RESERVED FOR FUTURE CONFIGURATIONS			
	600V	L4			RESERVED FOR FUTURE CONFIGURATIONS			
2 Pole 3 Wire Grounding	125V	L5	L5-15R 	L5-15P 	L5-20R 	L5-20P 	L5-30R 	L5-30P 
	250V	L6	L6-15R 	L6-15P 	L6-20R 	L6-20P 	L6-30R 	L6-30P 
	277V/AC	L7	L7-15R 	L7-15P 	L7-20R 	L7-20P 	L7-30R 	L7-30P 
	347V/AC	L24			L24-20R 	L24-20P 		
	480V/AC	L8			L8-20R 	L8-20P 	L8-30R 	L8-30P 
	600V/AC	L9			L9-20R 	L9-20P 	L9-30R 	L9-30P 
3 Pole 3 Wire	125/250V	L10			L10-20R 	L10-20P 	L10-30R 	L10-30P 
	3Ø 250V	L11	L11-15R 	L11-15P 	L11-20R 	L11-20P 	L11-30R 	L11-30P 
	3Ø 480V	L12			L12-20R 	L12-20P 	L12-30R 	L12-30P 
	3Ø 600V	L13					L13-30R 	L13-30P 
3 Pole 4 Wire Grounding	125/250V	L14			L14-20R 	L14-20P 	L14-30R 	L14-30P 
	3Ø 250V	L15			L15-20R 	L15-20P 	L15-30R 	L15-30P 
	3Ø 480V	L16			L16-20R 	L16-20P 	L16-30R 	L16-30P 
	3Ø 600V	L17					L17-30R 	L17-30P 
4 Pole 4 Wire	3ØY 120/208V	L18			L18-20R 	L18-20P 	L18-30R 	L18-30P 
	3ØY 277/480V	L19			L19-20R 	L19-20P 	L19-30R 	L19-30P 
	3ØY 347/600V	L20			L20-20R 	L20-20P 	L20-30R 	L20-30P 
4 Pole 5 Wire Grounding	3ØY 120/208V	L21			L21-20R 	L21-20P 	L21-30R 	L21-30P 
	3ØY 277/408V	L22			L22-20R 	L22-20P 	L22-30R 	L22-30P 
	3ØY 347/600V	L23			L23-20R 	L23-20P 	L23-30R 	L23-30P 

**W-17**  
TECHNICAL  
REFERENCE

## Horsepower Ratings for NEMA Configurations – for Plugs and Receptacles Only

### Straight Blade Configurations

NEMA	AC HP Rating	Rating
1-15	0.5	15A-125V
2-15	1.5*	15A-250V
2-20	2*	20A-250V
2-30	2*	30A-250V
5-15	0.5	15A-125V
5-20	1	20A-125V
5-30	2	30A-125V
5-50	2	50A-125V
6-15	1.5*	15A-250V
6-20	2*	20A-250V
6-30	2*	30A-250V
6-50	3*	50A-250V
7-15	2	15A-277V/AC Only
7-20	2	20A-277V/AC Only
7-30	3	30A-277V/AC Only
7-50	5	50A-277V/AC Only
10-20	2L-L*/1 L-N	20A-125/250V
10-30	2 L-L*/2 L-N	30A-125/250V
10-50	3 L-L*/2L-N	50A-125/250V
11-15	2	15A-250V 3Ø
11-20	3	20A-250V 3Ø
11-30	3	30A-250V 3Ø
11-50	7.5	50A-250V 3Ø
14-15	1.5 L-L*/0.5 L-N	15A-125/250V
14-20	2 L-L*/1 L-N	20A-125/250V
14-30	2 L-L*/2 L-N	30A-125/250V
14-50	3 L-L*/2 L-N	50A-125/250V
14-60	3 L-L*/2 L-N	60A-125/250V
5-15	2	15A-250V 3Ø
15-20	3	20A-250V 3Ø
15-30	3	30A-250V 3Ø
15-50	7.5	50A-250V 3Ø
15-60	10	60A-250V 3Ø
18-15	2	15A-120/208V 3ØY
18-20	2	20A-120/208V 3ØY
18-30	3	30A-120/208V 3ØY
18-50	7.5	50A-120/208V 3ØY
18-60	7.5	60A-120/208V 3ØY

L-L denotes phase-to-phase HP rating

L-N denotes phase-to-neutral HP rating

\*Suitable for 208V motor applications at HP rating

### Locking Configurations

NEMA	AC HP Rating	Rating
L-15	0.5	15A-125V
L2-20	2*	20A-250V
L5-15	0.5	15A-125V
L5-20	1	20A-125V
L5-30	2	30A-125V
L6-15	1.5*	15A-250V
L6-20	2*	20A-250V
L6-30	2*	30A-250V
L7-15	2	15A-277V/AC Only
L7-20	2	20A-277V/AC Only
L7-30	3	30A-277V/AC Only
L8-20	3	20A-480V/AC Only
L8-30	5	30A-480V/AC Only
L9-20	NA	20A-600V/AC Only
L9-30	NA	30A-600V/AC Only
L10-20	2 L-L*/1 L-N	20A-125/250V
L10-30	2 L-L*/2 L-N	30A-125/250V
L11-15	2	15A-250V 3Ø
L11-20	3	20A-250V 3Ø
L11-30	3	30A-250V 3Ø
L12-20	5	20A-480V 3Ø
L12-30	10	30A-480V 3Ø
L13-30	NA	30A-600V 3Ø
L14-20	2L-L*/1 L-N	20A-125/250V
L14-30	2 L-L*/2 L-N	30A-125/250V
L15-20	3	20A-250V 3Ø
L15-30	3	30A-250V 3Ø
L16-20	5	20A-480V 3Ø
L16-30	10	30A-480V 3Ø
L17-30	NA	30A-600V 3Ø
L18-20	2	20A-120/208V 3ØY
L18-20	2	20A-120/208V 3ØY
L18-30	3	30A-120/208V 3ØY
L19-20	5	20A-277/480V 3ØY
L20-20	NA	20A-347/600V 3ØY
L20-30	NA	30A-347/600V 3ØY
L21-20	2	20A-120/208V 3ØY
L21-30	3	30A-120/208V 3ØY
L22-20	5	20A-277/480V 3ØY
L22-30	10	30A-277/480V 3ØY
L23-20	NA	20A-347/600V 3ØY

L-L denotes phase-to-phase HP rating

L-N denotes phase-to-neutral HP rating

\*Suitable for 208V motor applications at HP rating

**W-18**  
TECHNICAL  
REFERENCE

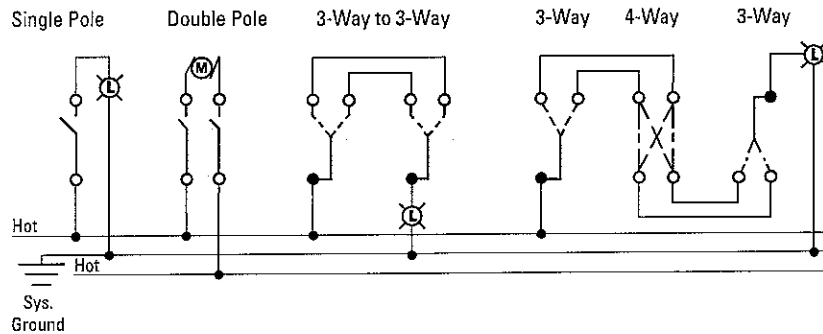
# Wiring Diagrams

## AC Switches

Pilot Light and Lighted Switch -  
Single and Double Pole

Pilot Light Switch and Lighted Switch -  
3 Way

### AC Switches

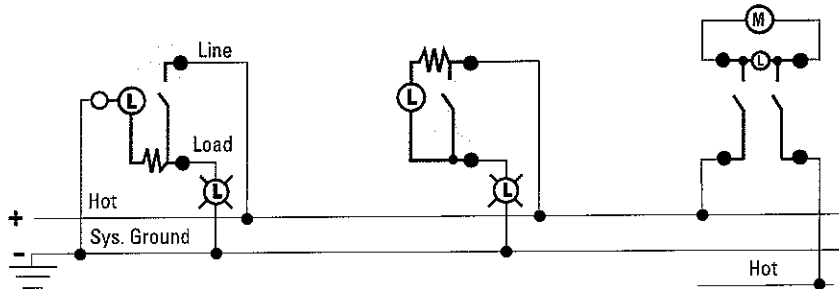


### Pilot Light Switch & Lighted Switch, Single and Double Pole

Single Pole Pilot Light Switch - Toggle Glows When Switch is On

Single Pole Lighted Toggle Switch - Toggle Glows When Switch is Off

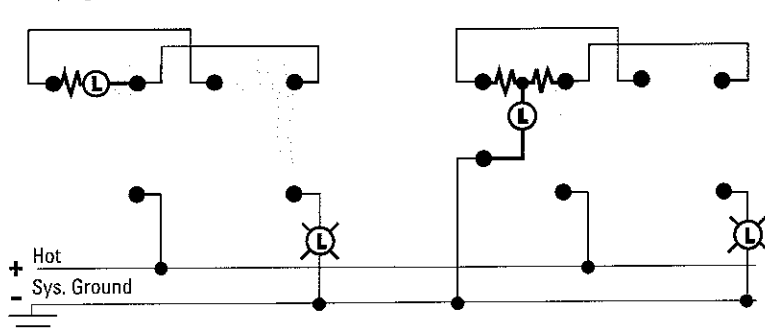
Double Pole Pilot Light Switch - Toggle Glows When Switch is On



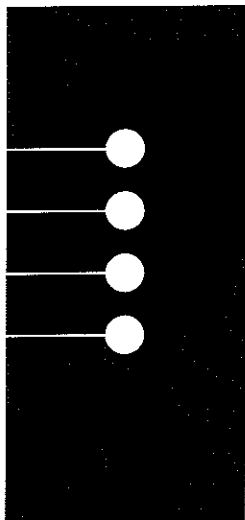
### Pilot Light Switch & Lighted Switch 3-Way

3-Way Lighted Switch

3-Way Pilot Lighted Switch



**W-19**  
**TECHNICAL**  
**REFERENCE**

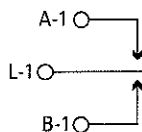


**Maintained & Momentary Contact, Single Pole**

## Wiring Diagrams Switches and Receptacles

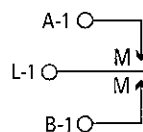
**Maintained and Momentary Contact –  
Single and Double Pole Switches  
15A 12V Receptacles**

**Single Pole  
Double Throw**



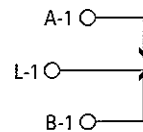
**Maintained Contact  
3-Position, 2-Circuit  
Center "Off"**

**Single Pole  
Double Throw**



**Momentary Contact  
Either Direction  
3-Position, Center "Off"**

**Single Pole  
Double Throw**



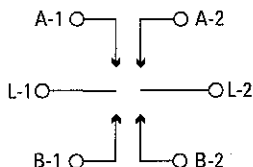
**Maintained Contact  
Either Direction  
2-Position, No Center "Off"**

## W-20

### TECHNICAL REFERENCE

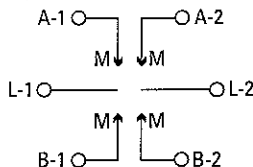
**Maintained & Momentary Contact,  
Double Pole**

**Double Pole  
Double Throw  
Center Off**



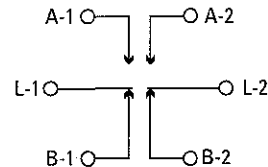
**3-Position  
Maintained  
Contact**

**Double Pole  
Double Throw  
Center Off**



**Momentary Contact  
Either Direction  
3-Position Center Off**

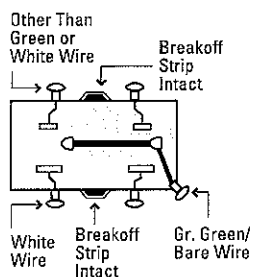
**Double Pole  
Double Throw  
No Center Off**



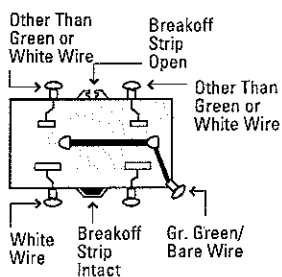
**Maintained Contact  
Either Direction  
2-Position No Center Off**

**Receptacles  
15A-125V**

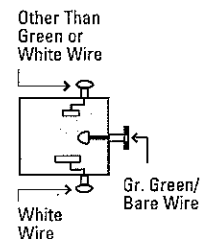
**1 Circuit  
Duplex Receptacle**



**Split Circuit  
Duplex Receptacle**



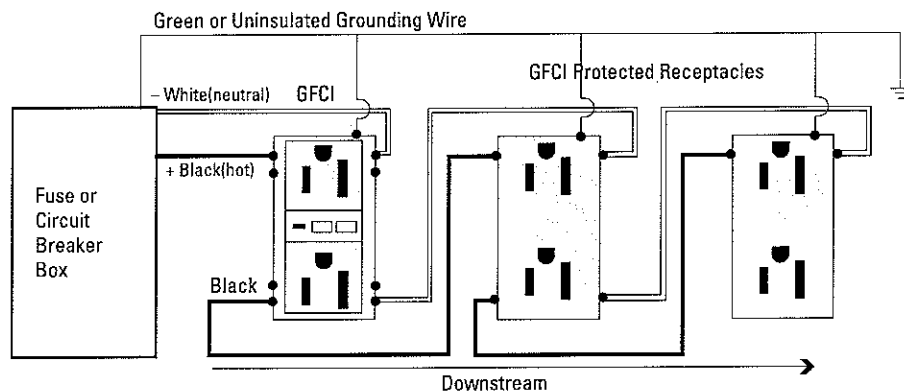
**1 Circuit  
Single Receptacle**



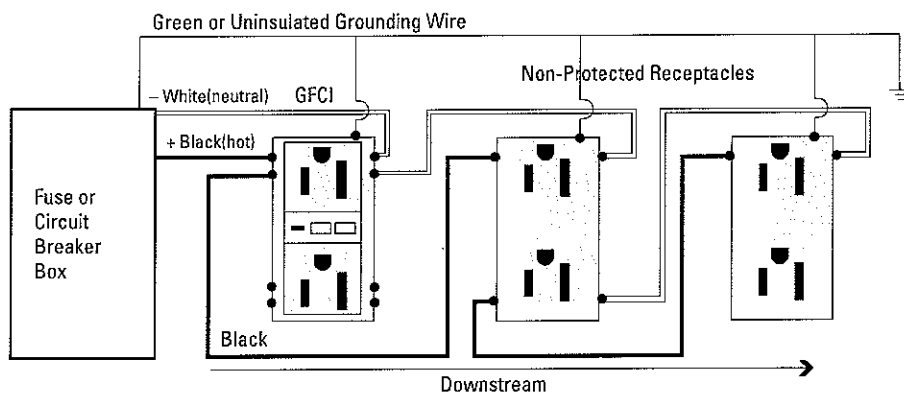
# Wiring Diagrams

## GFCI Receptacles Feed-Through with Protected and Non-Protected Receptacles Downstream

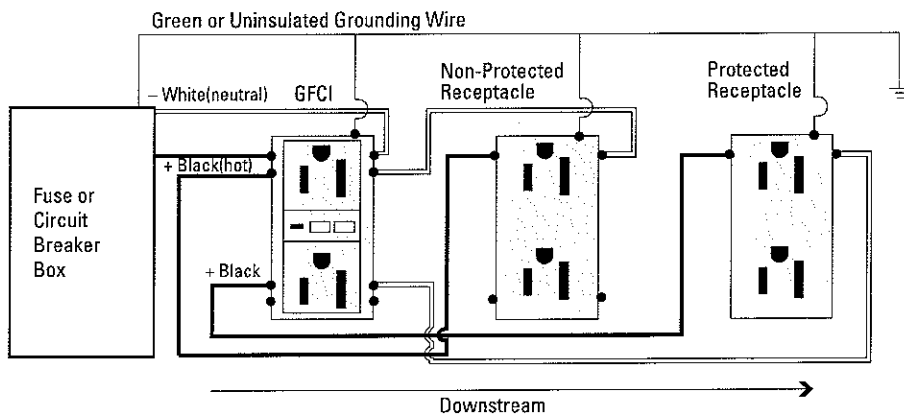
**GFCI Receptacle,  
Feed-Through  
Installation with  
Protection Provided  
Downstream**



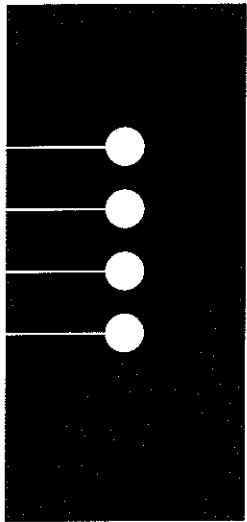
**GFCI Receptacle,  
Feed-Through  
Installation with  
Non-Protected  
Receptacles  
Downstream**



**GFCI Receptacle  
Feed-Through  
Installation  
with Both  
Protected and  
Non-Protected  
Receptacles  
Downstream**



**W-21**  
TECHNICAL  
REFERENCE



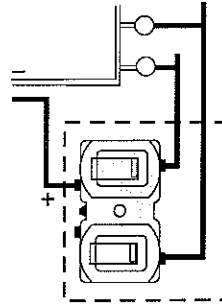
## Wiring Diagrams

### Combination Devices

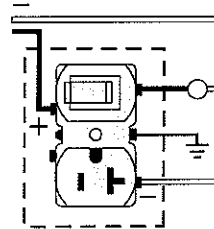
## W-22

TECHNICAL  
REFERENCE

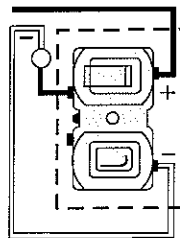
2 Quiet Single Pole  
Switches



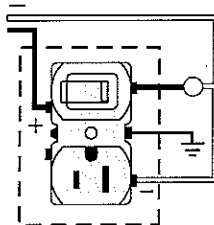
Quiet Single Pole Switch  
and 2 Pole, 3 Wire  
20A U Grounding  
Receptacle



Quiet Single Pole Switch,  
and Neon Pilot Light



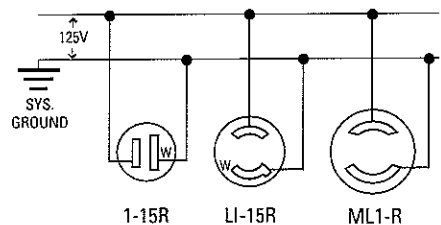
Quiet Single Pole Switch,  
and 2 Pole, 3 Wire  
U Grounding Receptacle



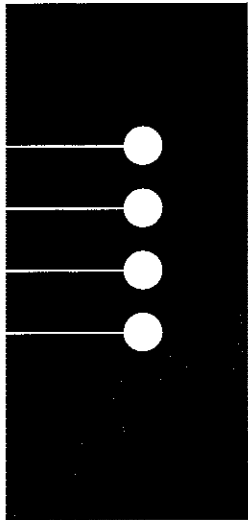
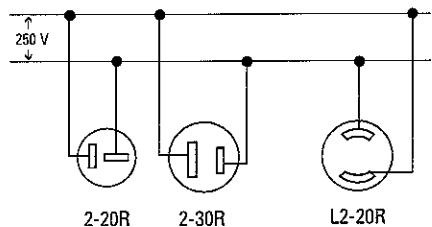
# Wiring Diagrams

## 2 Pole, 2 Wire Non-Grounding

2 Pole, 2 Wire  
Non-Grounding  
125V



2 Pole, 2 Wire  
Non-Grounding  
250V

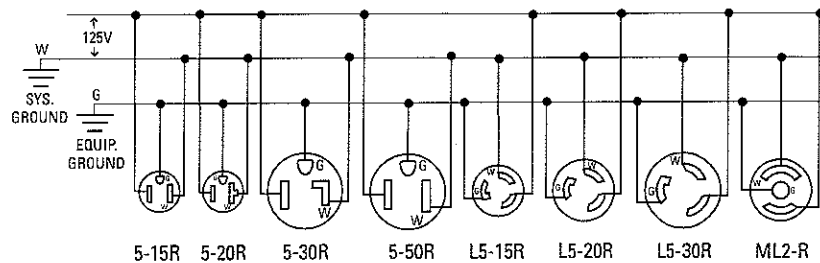


**W-23**  
TECHNICAL  
REFERENCE

# Wiring Diagrams

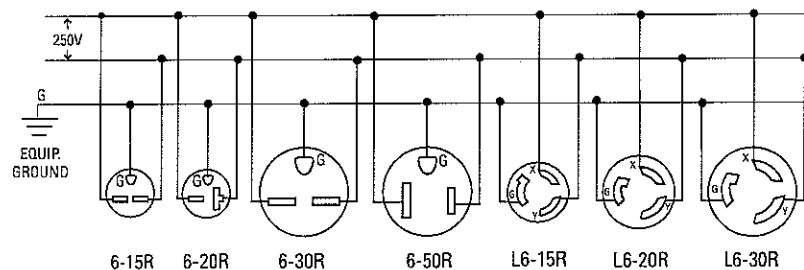
2 Pole, 3 Wire Grounding

2 Pole, 3 Wire  
Grounding  
125V

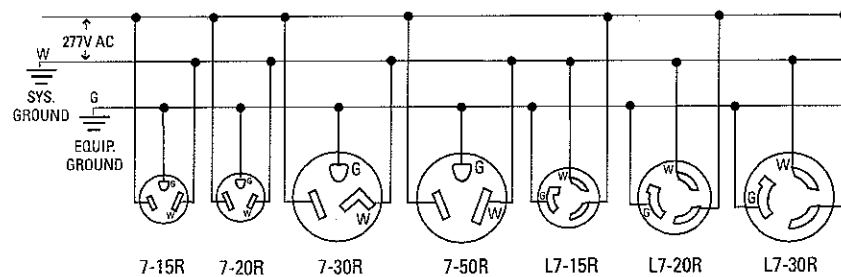


**W-24**  
TECHNICAL  
REFERENCE

2 Pole, 3 Wire  
Grounding  
250V



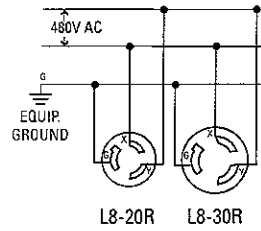
2 Pole, 3 Wire  
Grounding  
277V AC



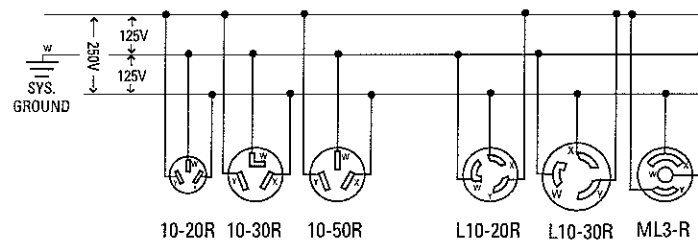
# Wiring Diagrams

2 Pole, 3 Wire Grounding  
3 Pole, 3 Wire Non-Grounding  
3 Pole, 3 Wire Non-Grounding

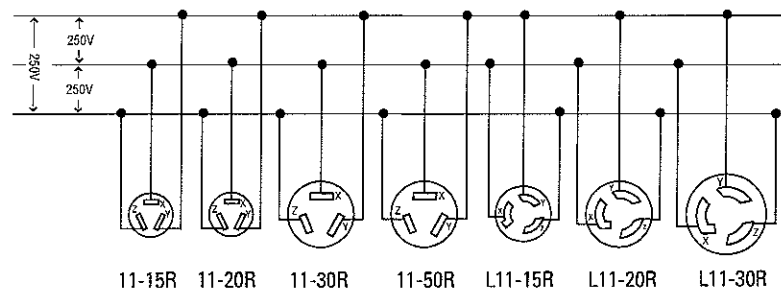
2 Pole, 3 Wire  
Grounding  
480V AC



3 Pole, 3 Wire  
Non-Grounding  
125/250V



3 Pole, 3 Wire  
Non-Grounding  
3ø 250V

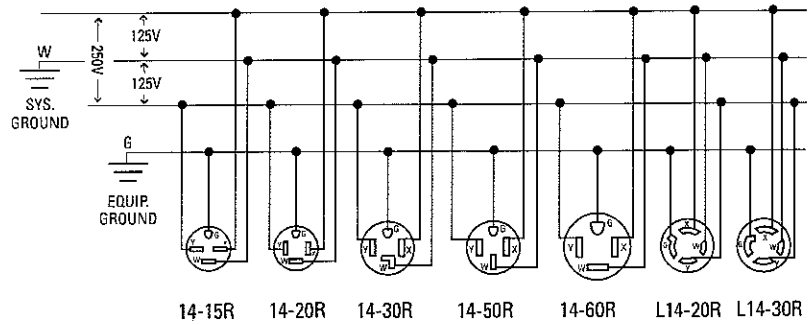


**W-25**  
TECHNICAL  
REFERENCE

# Wiring Diagrams

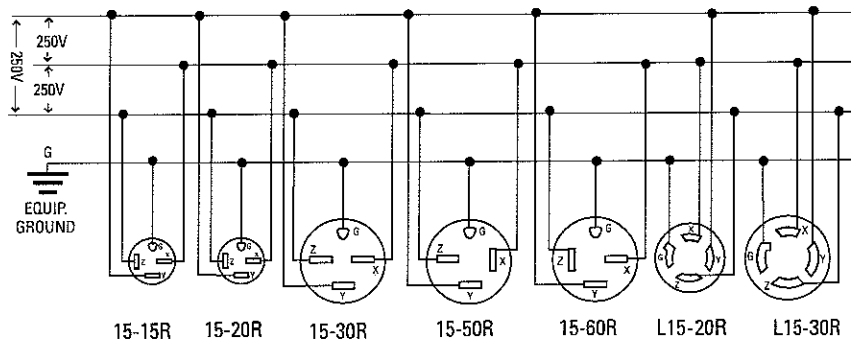
## 3 Pole, 4 Wire Grounding

**3 Pole, 4 Wire  
Grounding  
125/250V**

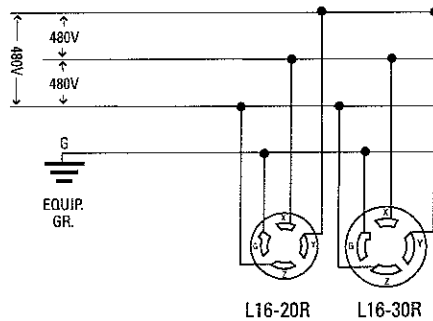


## W-26 TECHNICAL REFERENCE

**3 Pole, 4 Wire  
Grounding  
3ø 250V**



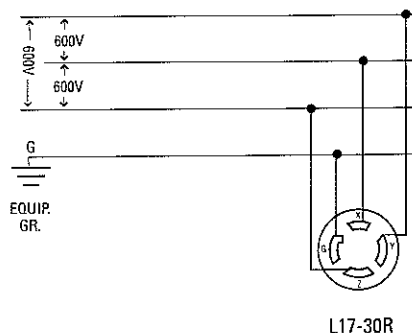
**3 Pole, 4 Wire  
Grounding  
3ø 480V**



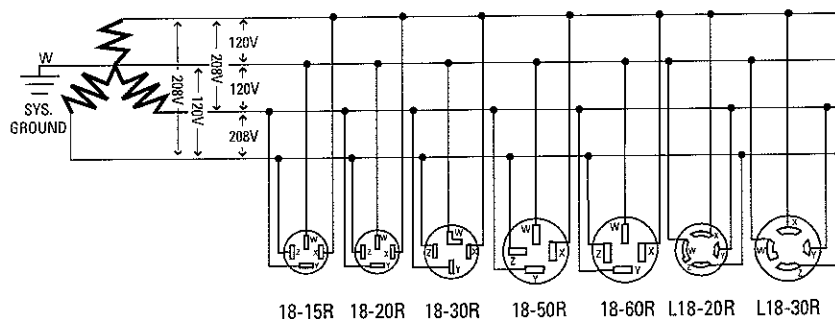
# Wiring Diagrams

3 Pole, 4 Wire Grounding  
4 Pole, 4 Wire Non-Grounding

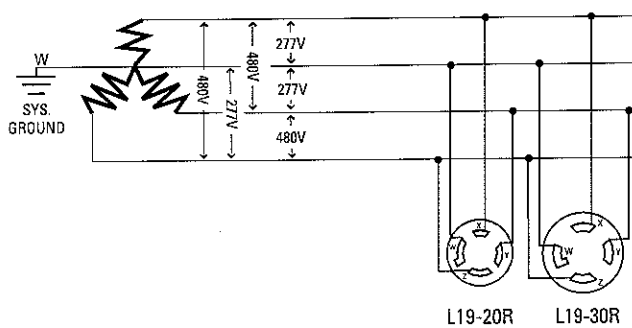
3 Pole, 4 Wire  
Grounding  
3ø 600V



4 Pole, 4 Wire  
Non-Grounding  
3ø 120/208V



4 Pole, 4 Wire  
Non-Grounding  
3ø 277/480V

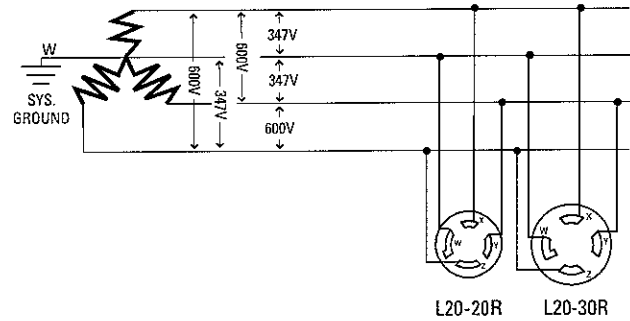


**W-27**  
TECHNICAL  
REFERENCE

## Wiring Diagrams

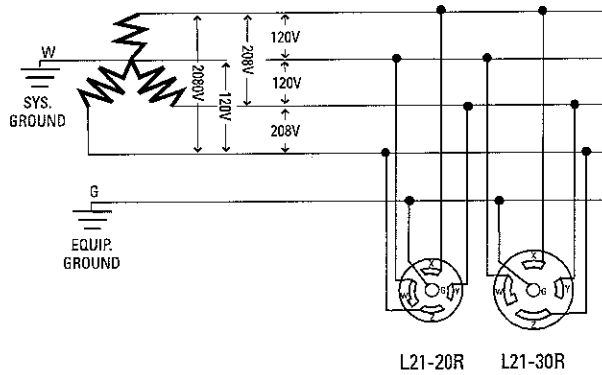
4 Pole, 4 Wire Non-Grounding  
4 Pole, 5 Wire Grounding

4 Pole, 4 Wire  
Non-Grounding  
3 $\phi$  347/600V

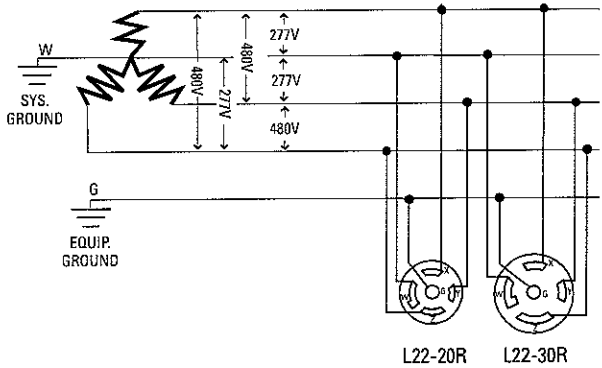


## W-28 TECHNICAL REFERENCE

4 Pole, 5 Wire  
Grounding  
3 $\phi$  120/208V



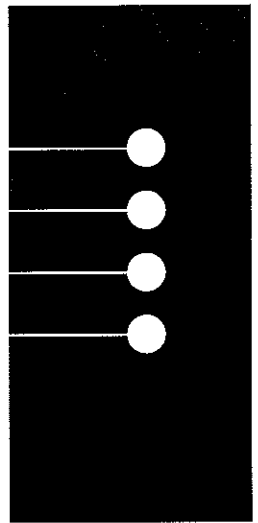
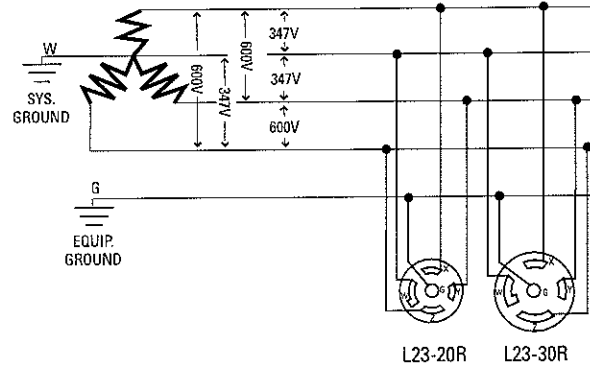
4 Pole, 5 Wire  
Grounding  
3 $\phi$  277/480V



# Wiring Diagrams

## 4 Pole, 5 Wire Grounding

4 Pole, 5 Wire  
Grounding  
3ø 347/600V



**W-29**  
TECHNICAL  
REFERENCE

## Diameter Ranges of Jacketed Cord in Accordance with Standard UL62

### Acceptable Range for Overall Diameter of Jacketed Cord

Type of Cord	Awg. Size	2-Conductor	3-Conductor	4-Conductor	5-Conductor
SV, SVO, SVT, SVTO	18	0.22"-0.26" (5.6mm-6.6mm)	0.23"-0.27" (5.8mm-6.9mm)	—	—
SJ, SJO, SJT, SJTO	18	0.28"-0.32" (7.1mm-8.1mm)	0.30"-0.34" (7.6mm-8.6mm)	0.33"-0.37" (8.4mm-9.4mm)	—
	16	0.31"-0.34" (7.9mm-8.6mm)	0.33"-0.36" (8.4mm-9.1mm)	0.35"-0.40" (8.9mm-10.2mm)	—
	14	0.34"-0.38" (8.6mm-9.7mm)	0.36"-0.40" (9.1mm-10.2mm)	0.39"-0.44" (9.9mm-11.2mm)	—
	12	0.41"-0.46" (10.4mm-11.7mm)	0.43"-0.48" (10.9mm-12.2mm)	0.47"-0.52" (11.9mm-13.2mm)	—
	10	0.54"-0.61" (13.7mm-15.5mm)	0.57"-0.64" (14.5mm-16.3mm)	0.63"-0.70" (16.0mm-17.8mm)	—
S, SO, ST, STO	18	0.34"-0.39" (8.6mm-9.9mm)	0.36"-0.40" (9.1mm-10.2mm)	0.39"-0.43" (9.9mm-10.9mm)	0.46"-0.51" (11.7mm-13.0mm)
	16	0.37"-0.41" (9.4mm-10.4mm)	0.39"-0.43" (9.9mm-10.9mm)	0.41"-0.46" (10.4mm-11.7mm)	0.49"-0.55" (12.4mm-14.0mm)
	14	0.50"-0.55" (12.7mm-14.0mm)	0.52"-0.58" (13.2mm-14.7mm)	0.56"-0.62" (14.2mm-15.7mm)	0.63"-0.71" (16.0mm-18.0mm)
	12	0.57"-0.63" (14.5mm-16.0mm)	0.59"-0.66" (15.0mm-16.8mm)	0.64"-0.71" (16.3mm-18.0mm)	0.70"-0.77" (17.8mm-19.6mm)
	10	0.62"-0.69" (15.7mm-17.5mm)	0.65"-0.72" (16.5mm-18.3mm)	0.70"-0.78" (17.8mm-19.8mm)	0.76"-0.84" (19.3mm-21.3mm)
	8	0.78"-0.88" (19.8mm-22.4mm)	0.83"-0.93" (21.1mm-23.6mm)	0.93"-1.05" (23.6mm-26.7mm)	1.00"-1.15" (25.4mm-29.2mm)
	6	0.92"-1.05" (23.4mm-26.7mm)	0.97"-1.10" (24.6mm-27.9mm)	1.05"-1.20" (26.7mm-30.5mm)	1.18"-1.33" (30.0mm-33.8mm)
	4	1.06"-1.21" (26.9mm-30.7mm)	1.13"-1.28" (28.7mm-32.5mm)	1.25"-1.45" (31.8mm-38.1mm)	—
	2	1.21"-1.40" (30.7mm-35.6mm)	1.30"-1.50" (33.0mm-38.1mm)	1.45"-1.65" (36.8mm-41.9mm)	—

**W-30**  
TECHNICAL  
REFERENCE

# Metric Conversion Table

Inches		mm	Inches		mm	Inches	mm	Inches	mm
1/64	0.015625	0.396875	33/64	0.515625	13.096875	1	25.4	34	863.6
1/32	0.031250	0.793750	17/32	0.531250	13.493750	2	50.8	35	889.0
3/64	0.046875	1.190625	35/64	0.546875	13.890625	3	76.2	36	914.4
1/16	0.062500	1.587500	9/16	0.562500	14.287500	4	101.6	37	939.8
5/64	0.078125	1.984375	37/64	0.578125	14.684375	5	127.0	38	965.2
3/32	0.093750	2.381250	19/32	0.593750	15.081250	6	152.4	39	990.6
7/64	0.109375	2.778125	39/64	0.609375	15.478125	7	177.8	40	1016.0
1/8	0.125000	3.175000	5/8	0.625000	15.875000	8	203.2	41	1041.4
9/64	0.140625	3.571875	41/64	0.640625	16.271875	9	228.6	42	1066.8
5/32	0.156250	3.968750	21/32	0.656250	16.668750	10	254.0	43	1092.2
11/64	0.171875	4.365625	43/64	0.671875	17.065625	11	279.4	44	1117.6
3/16	0.187500	4.762500	11/16	0.687500	17.462500	12	304.8	45	1143.0
13/64	0.203125	5.159375	45/64	0.703125	17.859375	13	330.2	46	1168.4
7/32	0.218750	5.556250	23/32	0.718750	18.256250	14	355.6	47	1193.8
15/64	0.234375	5.953125	47/64	0.734375	18.653125	15	381.0	48	1219.2
1/4	0.250000	6.350000	3/4	0.750000	19.050000	16	406.4	49	1244.6
17/64	0.265625	6.746875	49/64	0.765625	19.446875	17	431.8	50	1270.0
9/32	0.281250	7.143750	25/32	0.781250	19.843750	18	457.2	51	1295.4
19/64	0.296875	7.540625	51/64	0.796875	20.240625	19	482.6	52	1320.8
5/16	0.312500	7.937500	13/16	0.812500	20.637500	20	508.0	53	1346.2
21/64	0.328125	8.334375	53/64	0.828125	21.034375	21	533.4	54	1371.6
11/32	0.343750	8.731250	27/32	0.843750	21.431250	22	558.8	55	1397.0
23/64	0.359375	9.128125	55/64	0.859375	21.828125	23	584.2	56	1422.4
3/8	0.375000	9.525000	7/8	0.875000	22.225000	24	609.6	57	1447.8
25/64	0.390625	9.921875	57/64	0.890625	22.621875	25	635.0	58	1473.2
13/32	0.406250	10.318750	29/32	0.906250	23.018750	26	660.4	59	1498.6
27/64	0.421875	10.715625	59/64	0.921875	23.415625	27	685.8	60	1524.0
7/16	0.437500	11.112500	15/16	0.937500	23.812500	28	711.2	61	1549.4
29/64	0.453125	11.509375	61/64	0.953125	24.209375	29	736.6	62	1574.8
15/32	0.468750	11.906250	31/32	0.968750	24.606250	30	762.0	63	1600.2
31/64	0.484375	12.303125	63/64	0.984375	25.003125	31	787.4	64	1625.6
1/2	0.500000	12.700000	1	1.000000	25.400000	32	812.8	65	1651.0
						33	838.2	66	1676.4

To convert from inches to millimeters: Multiply number of inches x 25.4

To convert from millimeters to inches: Multiply number of millimeters x 0.0394

**W-31**  
TECHNICAL  
REFERENCE

# Plugs and Receptacles Industrial Heavy Duty Non-Hazardous

**1P**

Description	Page No.
<b>Application/Selection</b>	<b>934, 935</b>
<b>Arktite® Series</b>	
Technical Data	936-938
Aluminum AR/APJ Style	
20A	939
30A	940, 941
60A	942-945
100A	946, 947
200A	948, 949
400A	950, 951
Configured Arktite® ARC/APJC Style	
Technical Data	952, 953
30, 60, 100A	954-956
Back Boxes	957, 958
Mesh Grips, Screw Caps, Spring Doors	957-959
Krydon® NR/NPJ Style	
Technical Data	960, 961
30, 60, 100A	962, 963
Dimensional Data	964-966
Cable Extension Connectors	967, 968
Flanged Panel Mount	969, 970
Motor Plugs	971, 972

# 1P Plugs and Receptacles

## Industrial Heavy Duty

### Application and Selection

#### Application:

- Distribution of secondary electrical power
- Provide quick disconnect from power source

#### Considerations for Selection:

##### Electrical System:

- Amperage and voltage required for application

Wiring system and number of conductors required. See page 938 for contact sizes.

##### Compatibility with System:

- Need for interchangeability with plugs in existing system and within parts of new system. Grounding styles. Two styles utilized. See page 937 for complete description to determine which is suitable for needs.

##### Mounting Arrangement:

- Three types of mounting available – surface, flush and panel

##### Application:

- Fixed receptacle for power outlet; cable connectors for portable cable extensions

##### Other Considerations:

- Wire sizes and recess dimensions available. See page 938 for complete details. National Electrical Code, UL, NEMA, Canadian Electrical Code, CSA compliances
- Environment – need for operation in harsh, dirty or corrosive conditions.

#### Options:

- Special polarity arrangements available as well as special back boxes and hub arrangements. See listing pages for details.

#### Quick Selector Chart

Electrical Characteristics							
Receptacle Series	Receptacle Type	Amperage (Range)	Volts (Max.)	No. of Poles (Range)	Grounding Style†	Mounting	Mating Plug
APR	Portable cable	20, 30, 60, 100, 200, 400	600VAC 250VDC	2-5	1-2		APJ, NPJ, APQ, AP
APRC	Portable cable	30, 60, 100	600VAC 250VDC	3-5	2		APJC, APQC
AR	Fixed	20, 30, 60, 100, 200, 400	600VAC 250VDC	2-5	1-2	Back box (surface)	APJ, NPJ, AP
ARC	Fixed	30, 60, 100	600VAC 250VDC	3-5	2	Back box (surface)	APJC
AR	Fixed	30, 60, 100, 200	600VAC 250VDC	2-4	1-2	Panel mtg. (semi-flush)	APJ, NPJ, AP
NPR	Portable cable	30, 60, 100	600VAC 250VDC	3-4	2		NPQ, APJ, NPJ (fixed)
NR	Fixed	30, 60, 100	600VAC 250VDC	3-4	2	Back box (surface)	APJ, NPJ

† See page 937 for detailed explanation.

# Plugs and Receptacles

1P

## Industrial Heavy Duty Interchangeability Chart

### Interchangeability Chart

Many of the plugs listed in this section can be used interchangeably with receptacles from other sections, both in hazardous and non-hazardous areas, **provided electrical rating and style of plug and receptacle are the same**. The following table is a summary of possible combinations.

Plugs Shown in Section 1P	Can be Used with These Receptacle Series	Listed in Section	Plugs & Receptacle Electrical Rating
APJ, NPJ*	DR	2P	30, 60 amp. 2-wire, 2-pole 3-wire, 3-pole 4-wire, 4-pole 2-wire, 3-pole 3-wire, 4-pole
	DBR	3P	30, 60, 100 amp. 3-wire, 3-pole 3-wire, 4-pole
	FSQ	4P	30 amp. 2-wire, 3-pole 3-wire, 4-pole
	EPC, EPCB, EBBR	4P	30, 60, 100 amp. 2-wire, 3-pole 3-wire, 4-pole
	NBR, NSR	3P	30, 60, 100 amp. 3-wire, 3-pole 3-wire, 4-pole
	WSR	3P	30, 60, 100 amp. 3-wire, 3-pole 3-wire, 4-pole
	WSRD	3P	60 amp. 3-wire, 3-pole 3-wire, 4-pole
CPH	AR, NR*, NPR*	1P	30 and 60 amp. 2-wire, 3-pole
	DR, CES, CESD	2P	
	FSQ, EPC, EPCB, DBR	4P	
	DBR, NBR, NSR, WSR, WSRD	3P	30 and 60 amp. 3-wire, 4-pole

\* NPJ, NR and NPR available in 2-wire, 3-pole and 3-wire, 4-pole electrical ratings only.

# Arktime® Heavy Duty Circuit Breaking Plugs and Receptacles

NEMA 4 Watertight

Industrial Heavy Duty  
Non-Hazardous Areas

## Application:

Arktime circuit breaking plugs and receptacles are used:

- to supply power to portable electrically operated devices such as motor-generator sets, compressors, heating and cooling units, welders, conveyors, lighting systems and similar equipment
- where temporary power is needed, such as at trailers, building units, heavy machinery and similar equipment
- wherever electrical loads must be quickly disconnected from power source
- in a typical installation, where a large machine utilizes a number of electrical motor drives and for ease of adjustment, removal, maintenance and replacement, each motor is connected by portable cord and Arktime receptacles rather than permanently wired
- in areas where dust, dirt, moisture and corrosion are a problem
- indoors and outdoors in non-hazardous areas of chemical plants, process industry facilities, meat packing plants, manufacturing plants and similar industrial locations

## Features:

- Circuit breaking: Plugs through 200 ampere rating may be disconnected under load; 400 ampere units are for service disconnect use only.
- Receptacles accept only plugs of the same amperage rating, style and number of poles, making it impossible to mismatch, and provides for positive polarization.
- Extra wide electrical spacing allows for maximum safety.
- Insulator materials are the result of intensive testing. Selection has been made based on highest dielectric strength, maximum mechanical and impact resistance, lowest moisture absorption and highest arc tracking resistance.
- A variety of installations is possible due to the availability of several types of back boxes.
- Designed to withstand rough usage and the effects of adverse environments.
- Reversible interiors, 30, 60 and 100 ampere (except 30 and 60 ampere, 5-pole) Arktime plug and receptacle interiors are interchangeable using a screwdriver. This makes it possible to feed a normally deenergized receptacle from an energized plug with usual Arktime safety; no energized contacts are exposed.
- Additional features are indicated in the view at right:
  - 1 Grounding contact in Style 2 is bonded to the receptacle housing.
  - 2 Easily wired interior assemblies in receptacles and plugs. See table on page 938 for type of contacts in units.
  - 3 Arktime Style 2, illustrated here, has an extra grounding contact which forms a parallel circuit with the circuit formed by the plug sleeve and receptacle detent spring, and assures continuity of the grounding

safety circuit under severe service. Grounding contact is no longer than the others, so grounding circuit is made first and broken last.

4 The arc formed by pulling the plug is instantly snuffed in the deep, confined insulated arcing chamber while the plug contact is still a considerable distance inside. The arc cannot travel over to the other side of the circuit or to the housing.

5 Detent spring forms a grounding path from plug sleeve to receptacle housing. Arktime plugs and receptacles are made in two styles. With either style, the portable appliance is grounded before it is energized and remains grounded until after it is deenergized. (Arktime Style 1, not

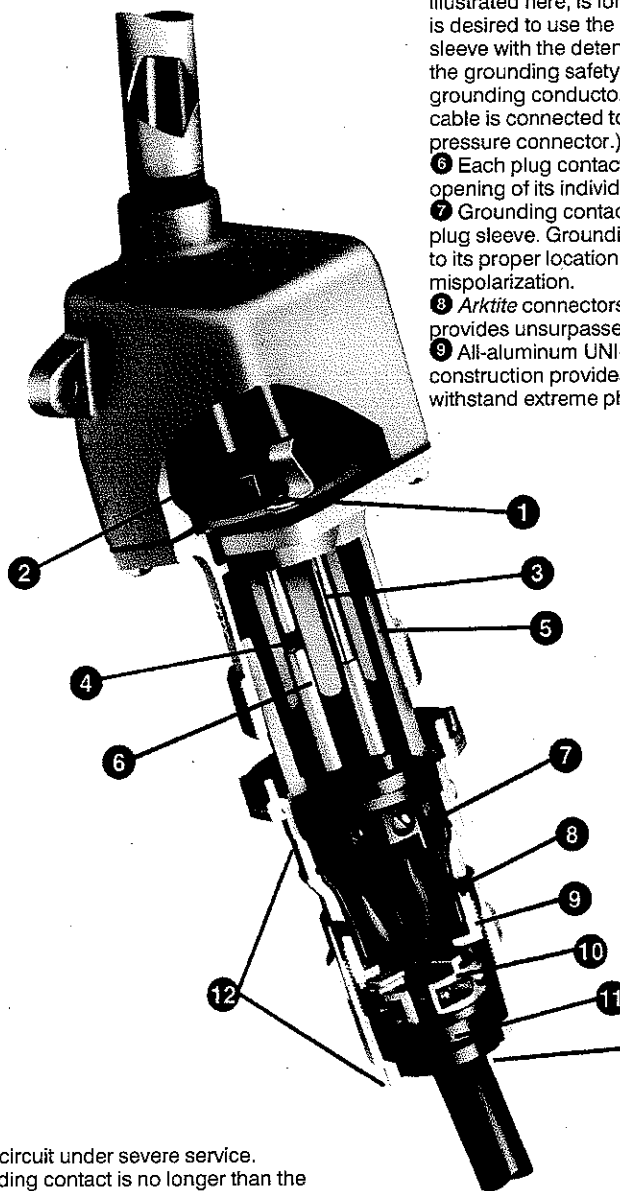
illustrated here, is for conditions where it is desired to use the contact of the plug sleeve with the detent spring to complete the grounding safety circuit. The extra grounding conductor in the portable cable is connected to the plug sleeve by a pressure connector.)

6 Each plug contact fits closely the opening of its individual arcing chamber.

7 Grounding contact is bonded to the plug sleeve. Grounding contact is keyed to its proper location to prevent mispolarization.

8 Arktime connectors' gasketing system provides unsurpassed watertight integrity.

9 All-aluminum UNI-SHELL™ threaded construction provides added strength to withstand extreme physical abuse.



NEW!  
NEMA 4  
Rating

Arktime Style 2  
60 ampere

NEW!  
Smaller  
Cable  
Range

10 Arktime's TRI-LOCK™ cable grip has three clamps that tighten around the cable to securely lock it in place, even when subjected to extreme flexing and jerking.

11 The unique SURE-SEAL™ cable gland provides a complete environmental seal by distributing pressure equally around the circumference of the cable.

12 Wrenching surfaces make Arktime connector quick and easy to assemble.

# Arktite® Heavy Duty Circuit Breaking Plugs and Receptacles

NEMA 4 Watertight

1P

Industrial Heavy Duty  
Non-Hazardous Areas

## Grounding:

Crouse-Hinds utilizes two methods for completing the grounding circuit in plugs and receptacles (See diagrams below). Refer to National Electrical Code Article 250.

### Style 1:

A Style 1 plug is one in which the grounding conductor in the flexible cable is bonded to the plug sleeve by a pressure connector. A Style 1 receptacle is one which is grounded by virtue of the fact that it is an integral part of a grounded conduit system. On insertion, the plug sleeve makes contact with detent springs of the grounded receptacle housing

before line and load poles engage, and on withdrawal, remains in contact until after line and load poles disengage. Therefore, exposed metal parts of the portable equipment or plug are suitably grounded.

### Style 2:

A Style 2 metallic housing plug is one in which the grounding conductor in the flexible cable is bonded to the extra (grounding) pole and metal plug sleeve by a pressure connector. A Style 2 metallic housing receptacle is one in which the extra (grounding) pole is electrically connected to the equipment grounding conductor and the metal receptacle housing which itself is

grounded by virtue of the fact that it is an integral part of a grounded conduit system. In Style 2, non-metallic housing plugs and receptacles, the extra pole is used for grounding since the housings are non-conductive. In a Style 2 receptacle, the grounding connection is made before line and load poles engage, and is broken after the line load poles disengage. Furthermore, upon insertion, the plug sleeve of metal shelled units, makes contact with detent springs of the grounded receptacle housing before line and load poles engage, and on withdrawal, remains in contact until after line and load poles disengage. Therefore, exposed metal parts of the portable equipment or plug are suitably grounded.

### Corrosive Locations:

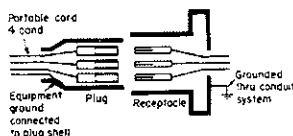
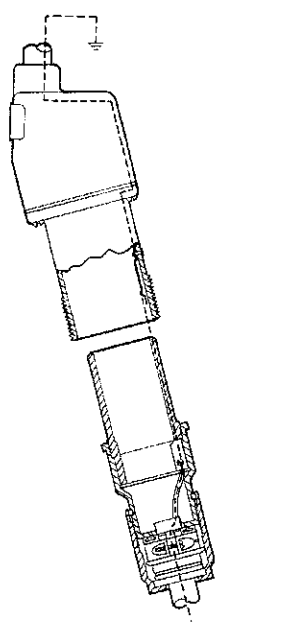
Section 300-6 of the *National Electrical Code/Canadian Electrical Code* requires that, under conditions favorable to corrosion, all equipment, including enclosures and conduit, be protected against corrosion since they form an essential grounding path. In alternating current systems, running a separate conductor, usually of copper, back to the common grounding electrode may be advisable. This may be run through the conduit containing the circuit conductors. At the receptacle, this grounding conductor should be connected to the extra (grounding) pole by the pressure connector provided for that purpose. Where such an extra grounding conductor is used, Style 2 receptacles should be used.

### Standard Materials:

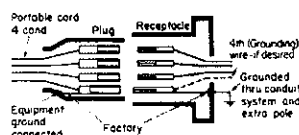
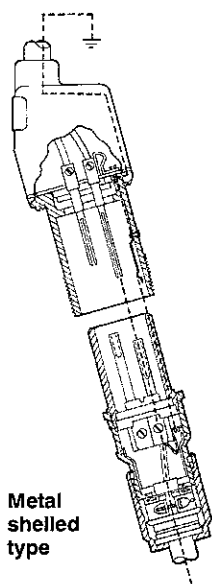
- Metallic receptacle housings, plug and cord connector bodies – high impact strength copper-free aluminum
- Nonmetallic receptacles, plugs and cord connectors – *Krydon*® fiberglass-reinforced polyester material
- Back boxes: 20, 30, 60, 100 and 200 ampere – cast aluminum; 400 ampere – *Feraloy*® iron alloy
- Insulation (metallic products): (2-, 3-, and 4-pole) 30, 60, 100, 200, 400 ampere – fiberglass-reinforced polyester; 20, 30 ampere (5-pole) – melamine
- Contacts: pressure, solder, binding screw – brass; crimp/solder – leaded red brass; 20, 30, 60, 100 ampere – tellurium copper; 200, 400 ampere

### Standard Finishes:

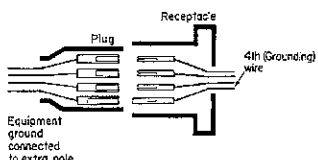
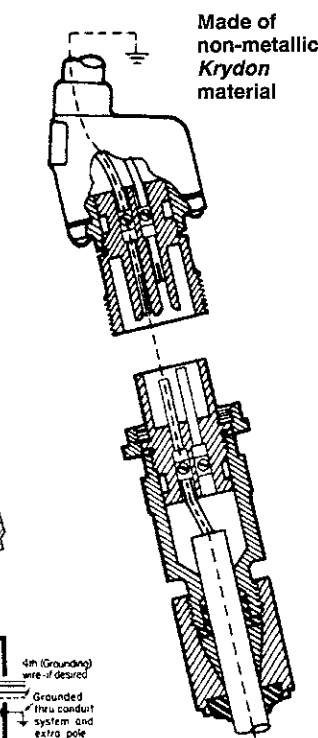
- *Feraloy*—electrogalvanized and aluminum acrylic paint
- Aluminum – natural
- *Krydon* fiberglass-reinforced polyester material – grey
- Fiberglass-reinforced polyester insulation – (red)
- Melamine – natural (brown)
- Brass – natural
- Leaded red brass – electro-tin-plate



Typical 3-wire, 3-pole  
plug and receptacle



Typical 3-wire,  
4-pole plug and  
receptacle



Style 2 units with a metallic housing have an extra (grounding) contact which forms a parallel circuit with the circuit formed by the plug sleeve and receptacle detent spring. Style 2 units with nonmetallic housings utilize the extra contact only for connecting the grounding circuit.

# Arktite® Heavy Duty Circuit Breaking Plugs and Receptacles

## Industrial Heavy Duty Non-Hazardous Areas

NEMA 4 Watertight

### Options:

- The following special options are available from factory by adding suffix to Cat. No.:

Suffix to be  
Added to  
Cat. #

#### Description

Reversed contacts. Receptacle assembled with plug interior (exposed contacts), plug assembled with receptacle interior (recessed contacts). For applications where plug is energized to feed normally de-energized receptacle. Available on 30 through 400 ampere units. . . . . S22

NOTE: 30 (2, 3, 4-pole), 60 and 100 ampere interiors can be interchanged in the field using a screwdriver. Factory conversion is required for 200 and 400 ampere products.

Special polarity. For use where two or more receptacles of the same ampere rating, style and number of poles are to be installed in the same area for use on different voltages and/or frequencies. Prevents insertion of a plug in a receptacle with different electrical rating. Available on 20 through 400 ampere units as follows:

Receptacle interior rotated 22½ degrees to right and plug changed to match

(specify cable range) . . . . . S4

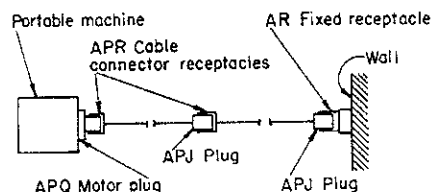
### Accessories:

Accessories include a variety of angle adapters, panel adapters and back boxes for Arktite receptacles, listed on pages 957-959. Included are wire mesh cable grips and protective caps for Arktite plugs, listed on page 959.

### Certifications and Compliances:

- UL Standards: 1682, 514; 1010 (APJ and NPJ plugs only)
- CSA Standard: C22.2 No. 182.1

### Typical installation



### Electrical Rating Ranges:

- Voltage – 600 vac, 50 to 400 hertz; 250 vdc
- Amperes – 20, 30, 60, 100, 200 and 400

### Maximum Horsepower Ratings

Electrical System	Continuous Duty Ampere Rating Plug and Receptacle	Motor Horsepower†			
		120 Volts	240 Volts	480 Volts	600 Volts
Single-phase	30	2	3	7.5	10
	60	5	10	25	20
	100	10	20		
	200	15	40		
Three-phase	30	3	5	10	10
	60	10	20	40	50
	100	15	30	40	25
	200	30	60	25	15

### Wire Sizes:

The table below lists the diameter of the wire recess in Arktite plug and receptacle contacts so that maximum size of bare conductor can be figured. Range of wire sizes shown in table is intended only as a guide. Depending on type of wire used (building wire, flexible or extra flexible cable) and its construction (number and size of strands), bare copper diameters vary widely.

### Diameter of Wire Recess in Plug and Receptacle Contacts

Ampere Rating	Contact Type	Diameter of Recess	Wire Size‡	
			Building	Extra Flex
20	Binding Screw	N/A	#14-#12	#14-#12
30 (2, 3, & 4-pole)	Pressure	.281	#10-#6	#10-#8
30 (2, 3, & 4-pole)	Crimp/Solder*	.180	#10-#8**	#10-#8
30 (5-pole)	Solder	.188	#12-#6	#12-#8
60 (2, 3, 4 & 5-pole)	Pressure	.312	#6-#4	#8-#4
60 (3 & 4-pole)	Crimp/Solder*	.277	#6-#4**	#8-#4
100 (2, 3 & 4-pole)	Pressure	.390	#4-#1	#4-#2
100 (3 & 4-pole)	Crimp/Solder*	.390	#2-#1**	#2-#2
200 (Std. 3 & 4-pole)	Crimp/Solder	.56	#1-4/0	#1-3/0
200 (Lg. 3 & 4-pole)	Crimp/Solder	.75	4/0-250MCM	3/0-250MCM
400 (Std. 3 & 4-pole)	Crimp/Solder	.84	250-500MCM	250-400MCM
400 (Lg. 3 & 4-pole)	Crimp/Solder	1.25	500-1000MCM	400-750MCM

\* Optional—suffix "T"—see listing pages

\*\* Smaller sizes may be used with well reducers – information on request.

† Horsepower ratings are based on Crouse-Hinds testing in which locked-rotor currents were interrupted by withdrawing the plug from the receptacle. It is highly recommended, however, that such use be limited to emergency conditions only; and that a horsepower rated switch be used for motor disconnect.

‡ Do not use wire size smaller than minimum size recommended.

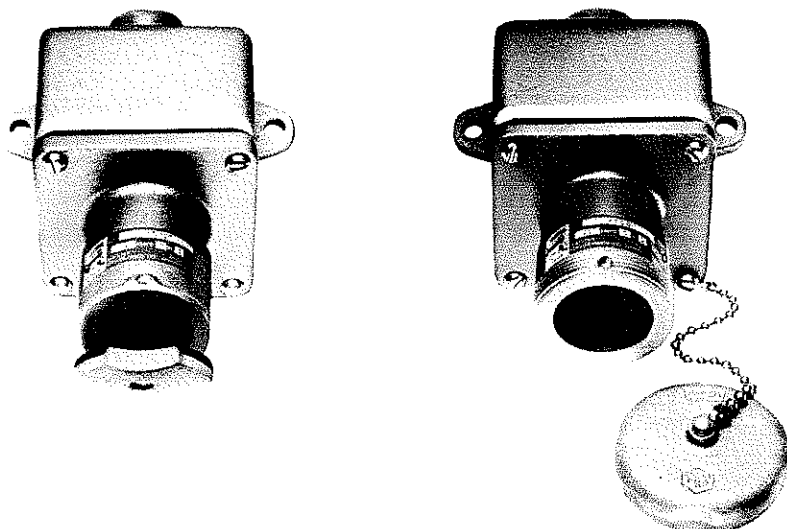
§ 400A rated units are for service disconnect use only.

# Arktite® Heavy Duty Circuit Breaking Receptacles, Plugs and Connectors

20 A, 600 VAC/250 VDC, 50\*\*-400 hertz

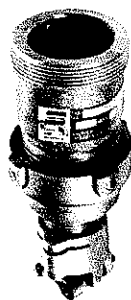
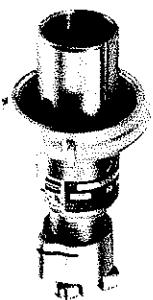
NEMA 4 Watertight  
Dimensions Pgs. 947, 961, 964-966

**1P**



## 20 A Assemblies With ARE Back Boxes – See Note Style 1

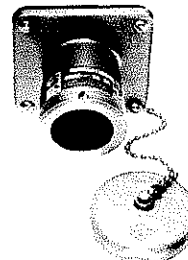
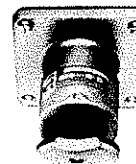
Description	Hub Size	Spring Door Cat. #	Threaded Cap Cat. #
2-wire,	1/2	ARE2211	ARE2271
2-pole	3/4	ARE2212	ARE2272



## Mating APR Connectors

## Mating APJ Plug†

Description	Cable Dia.	Less Fastening Ring Cat. #	Fastening Ring‡ Cat. #	Connector Cat. #
2-wire,	.250 to .500	APJ2251	APJ2271	APR2251
2-pole	.500 to .875	APJ2253	APJ2273	APR2253



## Receptacle Housings Only

Spring Door Cat. #	Threaded Cap Cat. #
AR221	AR227

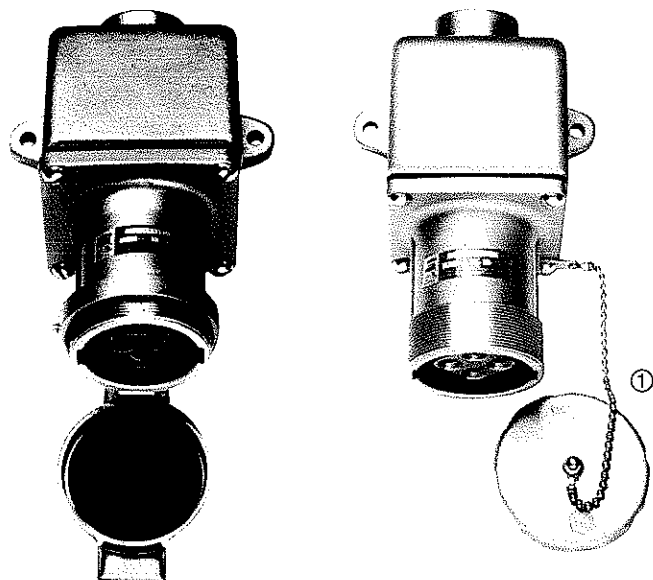
NOTE: For listing of additional back boxes, see pages 957 and 958.

† Furnished with cable grip and neoprene bushing.

‡ Use plugs with fastening ring with threaded cap receptacles.

§ Weatherproof when used with spring door or threaded cap covers.

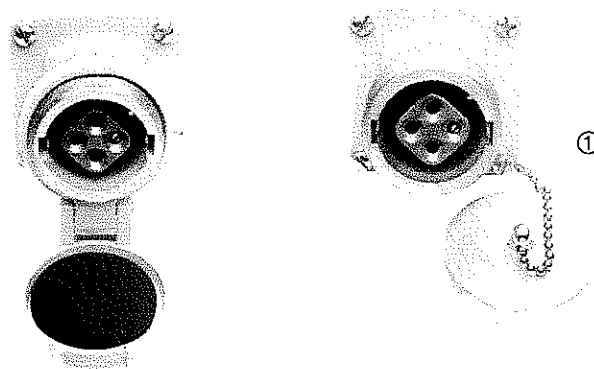
\*\* For use on systems less than 60 hertz the receptacles, plugs and connectors are for disconnect use only.

**1P****Arktite® Heavy Duty Circuit Breaking  
Receptacle Assemblies and Housings****30 A, 600 VAC/250 VDC, 50\*\*-400 hertz**NEMA 4 Watertight  
Dimensions Pgs. 947, 961, 964-966**Receptacle Assembly****30 A Assemblies  
With ARE Back Boxes – See Note  
Style 1**

Description	Hub† Size	Spring Door Cat. # ①
2-wire, 2-pole } *	1/2	ARE3211
	3/4	ARE3212
3-wire, 3-pole } *	3/4	ARE3312
	1	ARE3313
4-wire, 4-pole } *	3/4	ARE3412
	1	ARE3413
5-wire, 5-pole }	1	ARE3513

**Style 2**

2-wire, 3-pole } *	3/4	ARE3322
	1	ARE3323
3-wire, 4-pole } *	3/4	ARE3422
	1	ARE3423
4-wire, 5-pole }	1	ARE3523

**Receptacle****Receptacle  
Housings Only  
Style 1**

Spring Door Cat. # ①	Threaded Cap Only Cat. #
AR321	AR327
AR331	AR337
AR341	AR347
AR351	

**Style 2**

AR332	AR338
AR342	AR348
AR352	

① For threaded cap to use in place of the spring door, see page 957. Order QE covers separately.

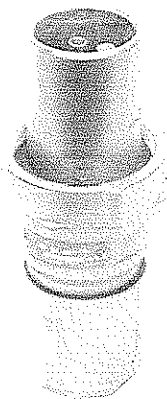
# Arktite® Heavy Duty Circuit Breaking Plugs and Connectors

30 A, 600 VAC/250 VDC, 50\*\*-400 hertz

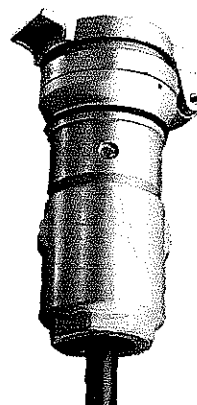
NEMA 4 Watertight  
Dimensions Page 968

1P

Plug



Connector



Mating  
APJ Plugs†

## Style 1

Description	Cat. #	Cable Dia.
2-wire, 2-pole } *	APJ3275	0.39 to 1.20
3-wire, 3-pole } *	APJ3375	0.39 to 1.20
4-wire, 4-pole } *	APJ3475	0.39 to 1.20
5-wire, 5-pole }	APJ3573 APJ3575	.500 to .875 .875 to 1.375

## Style 2

2-wire, 3-pole } *	APJ3385	0.39 to 1.20
3-wire, 4-pole } *	APJ3485	0.39 to 1.20
4-wire, 5-pole }	APJ3583 APJ3585	.500 to .875 .875 to 1.375

Mating APR  
Connectors

Cable Cat. #	Dia.
APR3255	0.39 to 1.20
APR3355	0.39 to 1.20
APR3455	0.87 to 1.02
APR3553 APR3555	.500 to .875 .875 to 1.375

### NOTE:

For listing of additional back boxes, see pages 957 and 958.

† Furnished with cable grip and neoprene bushing.

§ Weatherproof when used with spring door or threaded cap covers.

\* Pressure connectors are standard. Crimp/solder type terminators are optionally available for 2, 3 and 4-pole 30 ampere, 3 and 4-pole 60 and 100 ampere. For details, see table on page 938. To specify, add the suffix "T" to the catalog number. For example:  
ARE3211-T (Assembly) APJ3275-T (Plug)  
AR321-T (Receptacle) APR3255-T (Connector Receptacle)

\*\* For use on system less than 60 hertz the receptacles, plugs and connectors are for disconnect use only.

1P  
Heavy Duty Plugs  
and Receptacles

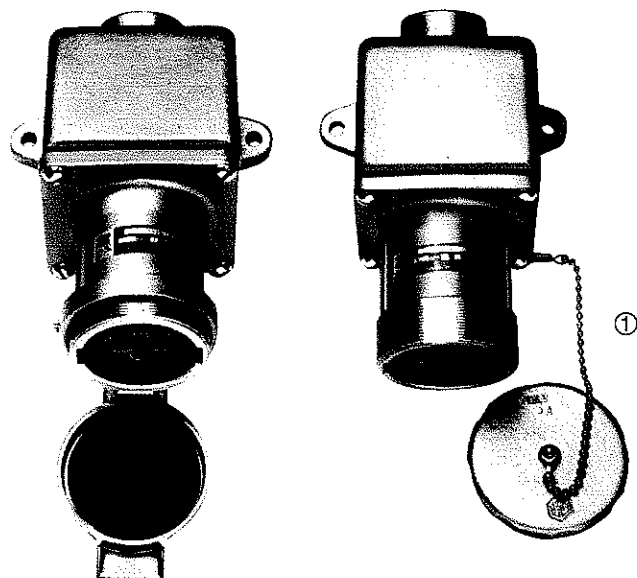
**1P**

# **Arktite® Heavy Duty Circuit Breaking Receptacle Assemblies and Housings**

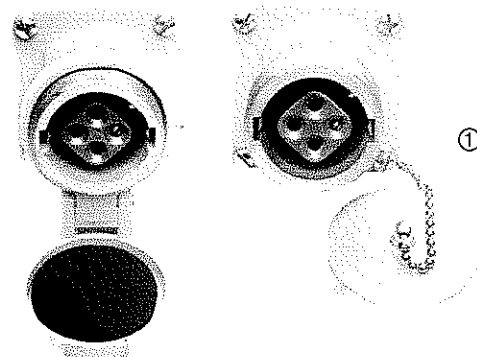
60 A, 600 VAC/250 VDC, 50\*\*-400 hertz

NEMA 4 Watertight  
Dimensions Pgs. 947, 961, 964-966

## **Receptacle Assembly**



## **Receptacle**



## **60 A Assemblies**

With ARE Back Boxes – See Notes

### **Style 1**

Description	Hub Size	Spring Door Cat. # ①
2-wire, 2-pole	1	ARE6213
	1¼	ARE6214
3-wire, 3-pole *	1	ARE6313
	1¼	ARE6314
4-wire, 4-pole *	1¼	ARE6414
	1½	ARE6415

### **Style 2**

2-wire, 3-pole *	1	ARE6323
	1¼	ARE6324
3-wire, 4-pole *	1¼	ARE6424
	1½	ARE6425

## **Receptacle Housings Only**

### **Style 1**

Spring Door Cat. # ①	Threaded Cap Only Cat. #
AR621	AR627
AR631	AR637
AR641	AR647

### **Style 2**

AR632	AR638
AR642	AR648

① For threaded cap to use in place of the spring door, see page 957. Order QE covers separately.

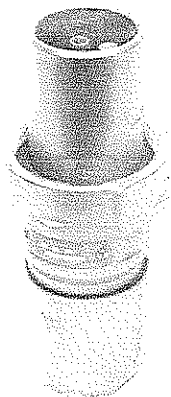
# Arktite® Heavy Duty Circuit Breaking Plugs and Connectors

60 A, 600 VAC/250 VDC, 50\*\*-400 hertz

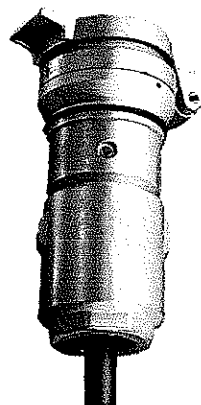
NEMA 4 Watertight  
Dimensions Page 968

1P

## Plug



## Connector



## Mating APJ Plugs†

## Mating APR Connectors

### Style 1

Description	Cat. #	Cable Dia.	Cat. #	Cable Dia.
2-wire, 2-pole }	APJ6275	0.50 to 1.45	APR6255	0.50 to 1.45
3-wire, 3-pole }	APJ6375	0.50 to 1.45	APR6355	0.50 to 1.45
4-wire, 4-pole }	APJ6475	0.50 to 1.45	APR6455	0.50 to 1.45

### Style 2

2-wire, 3-pole }	APJ6385	0.50 to 1.45	APR6365	0.50 to 1.45
3-wire, 4-pole }	APJ6485	0.50 to 1.45	APR6465	0.50 to 1.45

### NOTES:

When additional wiring space is required, select one of the 60 A AREA assemblies on page 944. For listing of additional back boxes, see pages 957 and 958.

† Furnished with cable grip and neoprene bushing.

§ Weatherproof when used with spring door or threaded cap covers.

\* Pressure connectors are supplied as standard. To specify crimp/solder type terminations, add the suffix "T" to the catalog number. For example:

ARE6213-T (Assembly)

APJ6275-T (Plug)

AR621-T (Receptacle)

APR6255-T (Connector Receptacle)

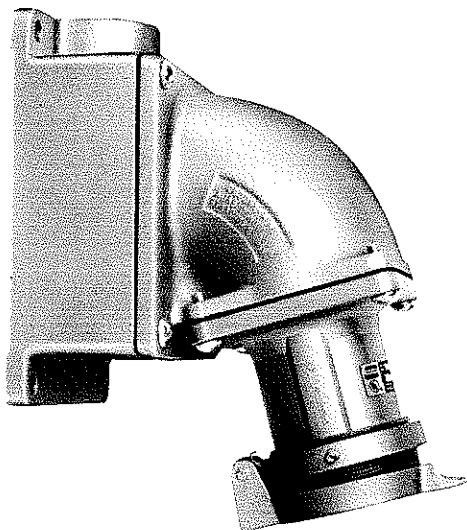
\*\* For use on systems less than 60 hertz the receptacles, plugs and connectors are for disconnect use only.

# Arktite® Heavy Duty Circuit Breaking Receptacle Assemblies and Housings

60 A, 600 VAC/250 VDC, 50\*\*-400 hertz

NEMA 4 Watertight  
Dimensions Pgs. 947, 961, 964-966

## Receptacle Assembly



### 60 A Assemblies

With AJ Back Boxes† and Angle Adapters – See Notes

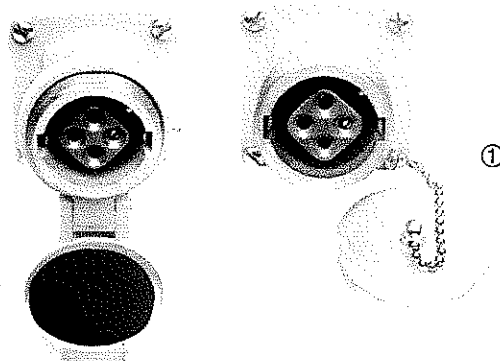
#### Style 1

Description	Hub Size	Spring Door Cat. # ①	Threaded Cap Only Cat. #
2-wire, 2-pole }	1	AREA6213	
	1¼	AREA6214	
3-wire, 3-pole }	1	AREA6313	
	1¼	AREA6314	
4-wire, 4-pole }	1¼	AREA6414	
	1½	AREA6415	
5-wire, 5-pole }	1¼		AREA6574
	1½		AREA6575

#### Style 2

2-wire, 3-pole }	* 1	AREA6323	
	1¼	AREA6324	
3-wire, 4-pole }	* 1¼	AREA6424	
	1½	AREA6425	
4-wire, 5-pole }	1¼		AREA6584
	1½		AREA6585

## Receptacle



### Receptacle Housings Only

#### Style 1

Spring Door Cat. # ①	Threaded Cap Only Cat. #
AR621	AR627
AR631	AR637
AR641	
	AR657

#### Style 2

AR632	AR638
AR642	AR648
	AR658

① For threaded cap to use in place of spring door, see page 957. Order QE covers separately.

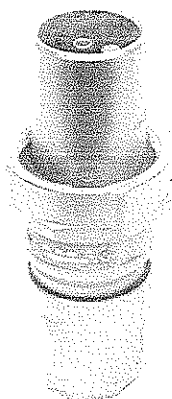
# Arktite® Heavy Duty Circuit Breaking Plugs and Connectors

60 A, 600 VAC/250 VDC, 50\*\*-400 hertz

NEMA 4 Watertight  
Dimensions Page 968

1P

## Plug



**Mating  
APJ Plugs†**

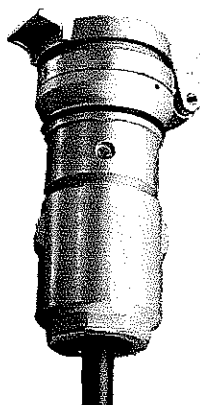
### Style 1

Description	Cat. #	Cable Dia.
2-wire, 2-pole }	APJ6275	0.50 to 1.45
3-wire, 3-pole }	APJ6375	0.50 to 1.45
4-wire, 4-pole }	APJ6475	0.50 to 1.45
5-wire, 5-pole }	APJ6575	0.50 to 1.45

### Style 2

2-wire, 3-pole }	APJ6385	0.50 to 1.45
3-wire, 4-pole }	APJ6485	0.50 to 1.45
4-wire, 5-pole }	APJ6585	0.75 to 1.45

## Connector



**Mating APR  
Connectors**

Cat. #	Cable Dia.
APR6255	0.50 to 1.45
APR6355	0.50 to 1.45
APR6455	0.50 to 1.45
APR6365	0.50 to 1.45
APR6465	0.50 to 1.45
APR6565	0.88 to 1.38
APR6567	1.38 to 1.88

#### NOTES:

Standard 60 A assemblies, for use where extra wiring space is not needed, are listed on page 942. For listing of additional back boxes, see pages 957 and 958.

§ Weatherproof when used with spring door or threaded cap covers.

† Furnished with cable grip and neoprene bushing.

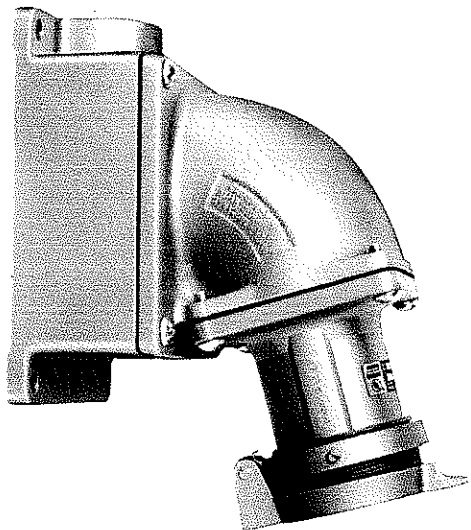
‡ AJ back boxes are square, making it possible to install with hub in several positions.

\* Pressure connectors are standard. Crimp/solder type terminators are optionally available for 2, 3 and 4-pole 30 ampere, 3 and 4-pole 60 and 100 ampere. For details, see table on page 938. To specify, add the suffix "T" to the catalog number. For example:

AREA6313-T (Assembly)  
AR631-T (Receptacle)

APJ6375-T (Plug)  
APR6355-T (Connector  
Receptacle)

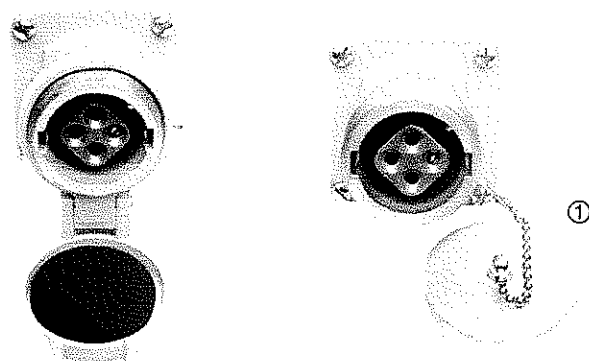
\*\* For use on systems less than 60 hertz the receptacles, plugs and connectors are for disconnect use only.

**1P****Arktite® Heavy Duty Circuit Breaking  
Receptacle Assemblies and Housings****100 A, 600 VAC/250 VDC, 50\*\*-400 hertz**NEMA 4 Watertight  
Dimensions Pgs. 947, 961, 964-966**Receptacle Assembly****100 A Assemblies****With AJ Back Boxes† and Angle Adapters  
See Note****Style 1**

Description	Hub Size	Spring Door Cat. # ①
2-wire, 2-pole }	1¼	AREA10214
	1½	AREA10215
3-wire, 3-pole }	1¼	AREA10314
	1½	AREA10315
4-wire, 4-pole }	1½	AREA10415
	2	AREA10416

**Style 2**

2-wire, 3-pole }	1¼	AREA10324
	1½	AREA10325
3-wire, 4-pole }	1½	AREA10425
	2	AREA10426

**Receptacle****Receptacle  
Housings Only****Style 1**

Spring Door Cat. # ①	Threaded Cap Only Cat. #
AR1021	AR1027
AR1031	AR1037
AR1041	AR1047

**Style 2**

AR1032	AR1038
AR1042	AR1048

① For threaded cap to use in place of spring door, see page 957. Order QE covers separately.

# Arktite® Heavy Duty Circuit Breaking Plugs and Connectors

100 A, 600 VAC/250 VDC, 50\*\*-400 hertz

NEMA 4 Watertight  
Dimensions Page 968

1P

## Plug

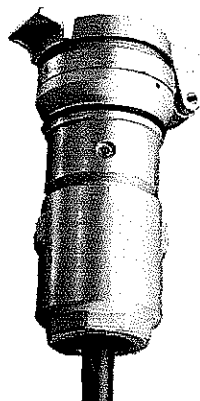


## Mating APJ Plugs†

### Style 1

Cat. #	Cable Dia.
APJ10277	0.875 to 1.70
APJ10377	0.875 to 1.70
APJ10477	0.875 to 1.70
<b>Style 2</b>	
APJ10387	0.875 to 1.70
APJ10487	0.875 to 1.70

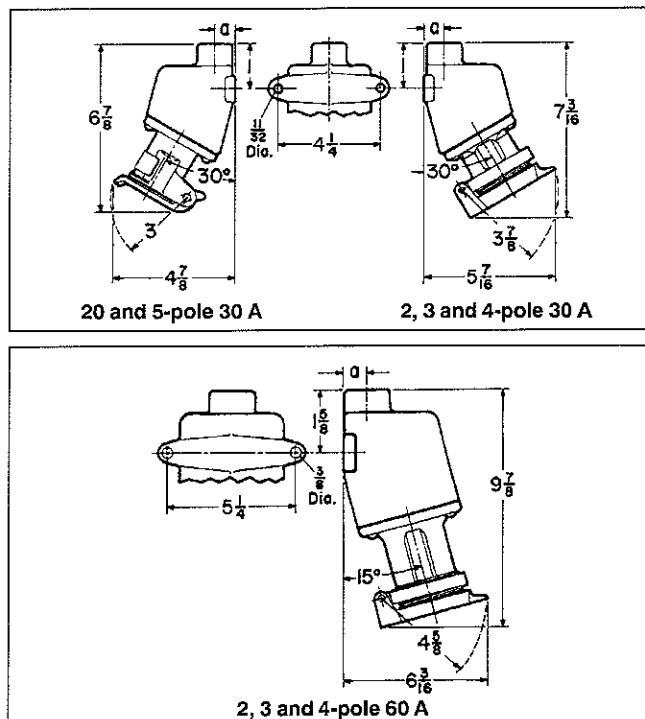
## Connector



## Mating APR Connectors

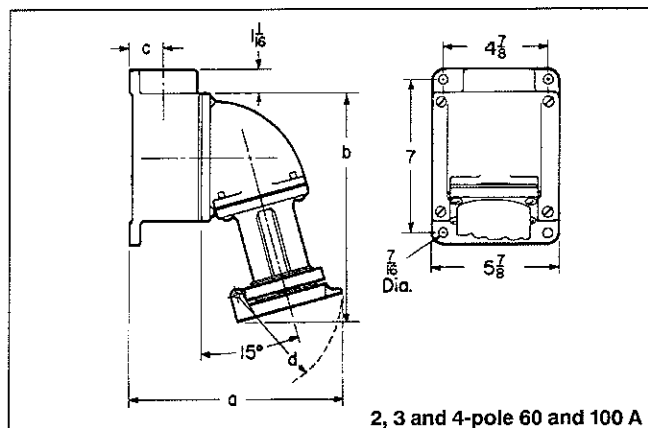
Cat. #	Cable Dia.
APR10257	0.875 to 1.70
APR10357	0.875 to 1.70
APR10457	0.875 to 1.70
<b>Style 2</b>	
APR10367	0.875 to 1.70
APR10467	0.875 to 1.70

## Dimensions



## ARE 20, 30 and 60 A Assemblies

Hub Size	Dimension a		
	20 A	30 A	60 A
$\frac{1}{2}$	$1\frac{1}{16}$	$1\frac{1}{16}$	
$\frac{3}{4}$	$1\frac{3}{16}$	$1\frac{3}{16}$	
1		$1\frac{5}{16}$	$1\frac{5}{16}$
$1\frac{1}{4}$		$1\frac{3}{4}$	$1\frac{3}{4}$
$1\frac{1}{2}$		$1\frac{5}{8}$	$1\frac{5}{8}$



## AREA 60 and 100 A Assemblies

Rating	a	b	c	d (door clearance)
60 A	$8\frac{7}{8}$	$9\frac{7}{16}$	$1\frac{1}{32}$	$4\frac{3}{8}$
100 A	$9\frac{7}{8}$	$10\frac{1}{2}$	$1\frac{1}{16}$	$4\frac{3}{4}$

### NOTE:

For listing of additional back boxes, see pages 957 and 958.

§ Weatherproof when used with spring door or threaded cap covers.

† Furnished with cable grip and neoprene bushing.

‡ AJ back boxes are square, making it possible to install with hub in several positions.

\* Pressure connectors are standard. Crimp/solder type terminators are optionally available for 2, 3 and 4-pole 30 ampere, 3 and 4-pole 60 and 100 ampere. For details, see table on page 938.

To specify, add the suffix "T" to the catalog number. For example:  
AREA10314-T (Assembly) APJ10377-T (Plug)  
AR1031-T (Receptacle) APR10357-T (Connector Receptacle)

\*\* For use on systems less than 60 hertz, the receptacles, plugs and connectors are for disconnect use only.

1P  
Heavy Duty Plugs  
and Receptacles

**1P**

# Arktite® Heavy Duty Circuit Breaking Receptacle Assemblies

200 A, 600 VAC/250 VDC, 50\*\*-400 hertz

Weatherproof

See pages 936, 937 and 938 for general Application, Features, Grounding, Standard Materials, Standard Finishes, Options, Accessories, Compliances, Electrical Rating Ranges, and Wire Sizes.

## Features:

- Grounding contact wire terminators will accommodate ground wire of same size as phase wire.
- Spring band contact design provides multiple points of electrical contact. Improves electrical reliability and significantly reduces effort required for insertion and withdrawal
- Crimp/solder type contacts are standard
- Large wire wells are available for "extra flexible" wire
- Larger wire well size connectors will interchange with connectors of other wire well size of same amperage and contact configuration.
- Self-closing spring doors on receptacles and cord connectors provide environmental sealing
- Threaded nuts provide positive plug retention
- Two piece plug and cord connector design provide easy installation

## NOTES:

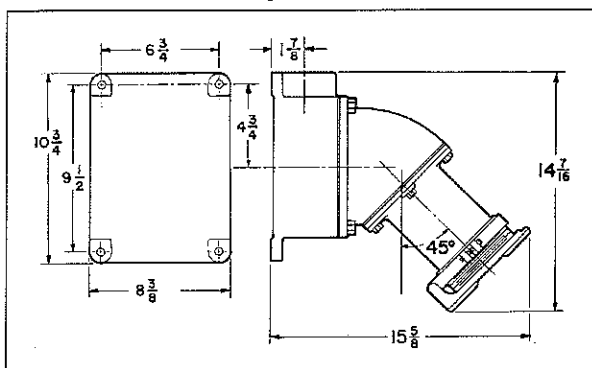
1. For listing of additional back boxes, see page 958.
2. S22 suffix for reverse interiors is available from factory only. Field conversion cannot be done.
3. Replacement interiors for standard units vs. S22 units vary in length. Specify the unit type when ordering parts.

† Furnished with cable grip and neoprene bushing.

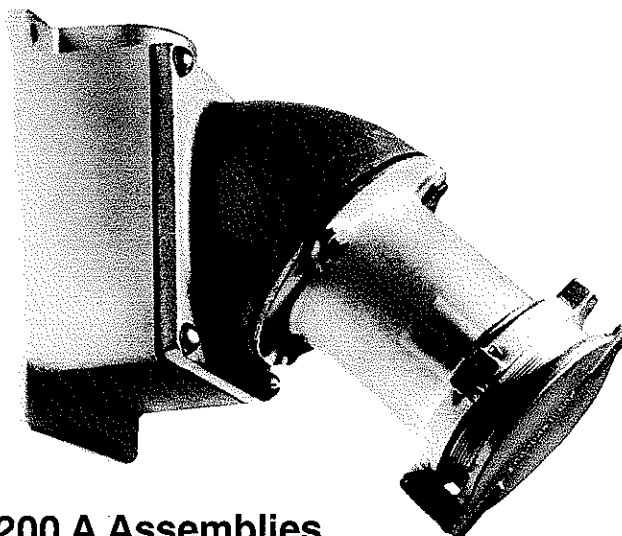
‡ AJ back boxes are square, making it possible to install with hub in several positions.

\*\* For use on system less than 60 hertz the receptacles, plugs and connectors are for disconnect use only.

## Dimensions AREA 200 A Assembly



## Receptacle Assembly



## 200 A Assemblies

With AJ Back Boxes† and  
Angle Adapters – See NOTE

Style 1 – Wire Well Takes .56" Maximum Conductor Size

Description	Hub Size	Spring Door Cover Cat. #
3-wire,	1½	AREA20315
3-pole	2	AREA20316
	2½	AREA20317
4-wire,	2	AREA20416
4-pole	2½	AREA20417

Style 1 – Wire Well Takes .75" Maximum Conductor Size

3-wire,	1½	AREA203125
3-pole	2	AREA203126
	2½	AREA203127
4-wire,	2	AREA204126
4-pole	2½	AREA204127

Style 2 – Wire Well Takes .56" Maximum Conductor Size

2-wire,	1½	AREA20325
3-pole	2	AREA20326
	2½	AREA20327
3-wire,	1½	AREA20425
4-pole	2	AREA20426
	2½	AREA20427

Style 2 – Wire Well Takes .75" Maximum Conductor Size

2-wire,	1½	AREA203225
3-pole	2	AREA203226
	2½	AREA203227
3-wire,	1½	AREA204225
4-pole	2	AREA204226
	2½	AREA204227

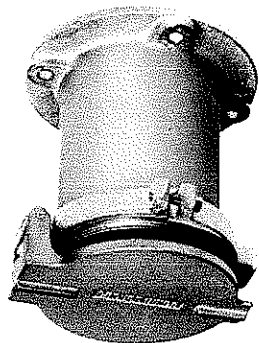
# Arktite® Heavy Duty Circuit Breaking Receptacle Housings Plugs and Cord Connectors

Weatherproof  
Dimensions Pages 964 and 968

1P

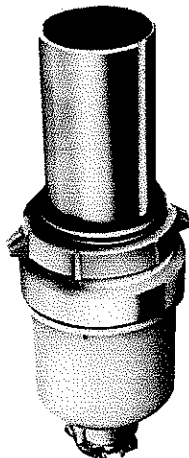
200 A, 600 VAC/250 VDC, 50\*\*-400 hertz

## Receptacle



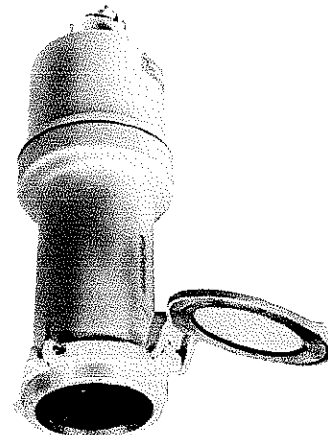
### AR Receptacle Housing Only

## Plug



### Mating AP Plugs<sup>†</sup>

## Connector



### Mating APR Cord Connectors

Receptacle Housing Cat. #	Cable Dia.	Plug Cat. #	Connector Cat. #
AR2031	0.875 to 1.375 1.375 to 1.875 1.875 to 2.500	AP20355 AP20357 AP20358	APR20315 APR20317 APR20318
AR2041	0.875 to 1.375 1.375 to 1.875 1.875 to 2.500	AP20455 AP20457 AP20458	APR20415 APR20417 APR20418
AR20312	1.375 to 1.875 1.875 to 2.500	AP203511 AP203512	APR203111 APR203112
AR20412	1.375 to 1.875 1.875 to 2.500 2.500 to 3.000	AP204511 AP204512 AP204513	APR204111 APR204112 APR204113
AR2032	0.875 to 1.375 1.375 to 1.875 1.875 to 2.500	AP20365 AP20367 AP20368	APR20325 APR20327 APR20328
AR2042	0.875 to 1.375 1.375 to 1.875 1.875 to 2.500	AP20465 AP20467 AP20468	APR20425 APR20427 APR20428
AR20322	0.875 to 1.375 1.375 to 1.875 1.875 to 2.500	AP203610 AP203611 AP203612	APR203210 APR203211 APR203212
AR20422	1.375 to 1.875 1.875 to 2.500	AP204611 AP204612	APR204211 APR204212

See pages 936, 937 and 938 for general Application, Features, Grounding, Standard Materials, Standard Finishes, Options, Accessories, Compliances, Electrical Rating Ranges, and Wire Sizes.

## Features:

- Grounding contact wire terminators will accommodate ground wire of same size as phase wire
- Spring band contact design provides multiple points of electrical contact. Improves electrical reliability and significantly reduces effort required for insertion and withdrawal
- Crimp/solder type contacts are standard.
- Large wire wells are available for "extra flexible" wire
- Larger wire well connectors will interchange with connectors of other wire well size, of same amperage and contact configuration.
- Self-closing spring doors on receptacles and cord connectors provide environmental sealing
- Threaded nuts provide positive plug retention
- Two piece plug and cord connector design provide easy installation
- For disconnect use only – not for current interrupting

## NOTES:

1. For listing of additional back boxes, see page 958. Illustration shows 3 blank plates and 1 hub plate.
2. S22 suffix for reverse interiors is available from factory only. Field conversion cannot be done.
3. Replacement interiors for standard units vs. S22 units vary in length. Specify the unit type when ordering parts.

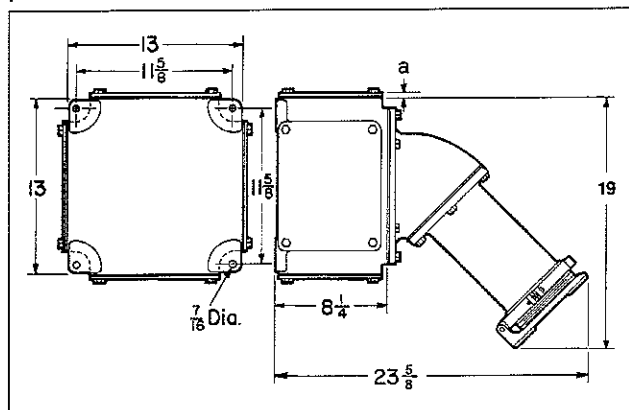
## Dimensions

### AREX 400 A Assemblies

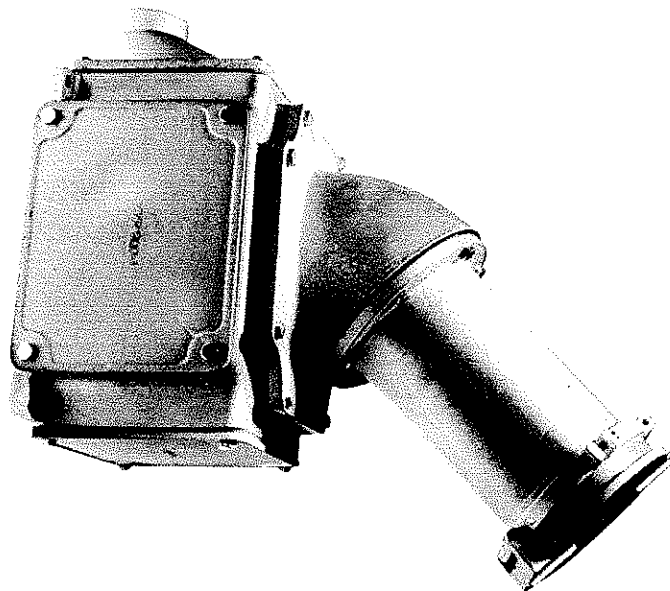
Description a

With blank hub plate  $\frac{5}{16}$

With hub plate max.  $4\frac{5}{8}$



## Receptacle Assembly



## 400 A Assemblies

With AJX Back Boxes† and Angle Adapters – See NOTE

### Style 1 – Wire Well Takes .84" Maximum Conductor Size

Description	Hub Size	Spring Door Cover Cat. #
3-wire, 3-pole	2½	AREX40317
	3	AREX40318
4-wire, 4-pole	2½	AREX40417
	3	AREX40418

### Style 1 – Wire Well Takes 1.25" Maximum Conductor Size

3-wire, 3-pole	3	AREX403128
	3½	AREX403129
	4	AREX4031210
4-wire, 4-pole	4	AREX4041210
	5	AREX4041212

### Style 2 – Wire Well Takes .84" Maximum Conductor Size

2-wire, 3-pole	2	AREX40326
	2½	AREX40327
	3	AREX40328
3-wire, 4-pole	2½	AREX40427
	3	AREX40428

### Style 2 – Wire Well Takes 1.25" Maximum Conductor Size

2-wire, 3-pole	3	AREX403228
	3½	AREX403229
	4	AREX4032210
3-wire, 4-pole	4	AREX4042210
	5	AREX4042212

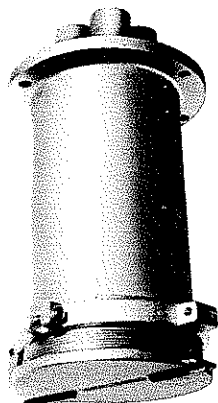
# Arktime® Heavy Duty Receptacle Housings, Plugs and Cord Connectors

400 A, 600 VAC/250 VDC, 50-400 hertz

Weatherproof §  
Dimensions Pages 964 and 968

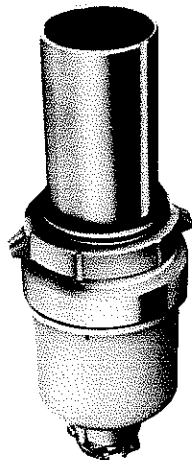
**1P**

## Receptacle



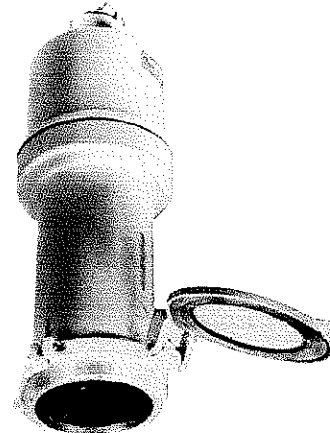
## AR Receptacle Housing Only

## Plug



## Mating AP Plugs†

## Connector



## Mating APR Connectors

Receptacle Housing  
Cat. #

Cable  
Dia.

Plug  
Cat. #

Connector  
Cat. #

AR4031

1.375 to 1.875  
1.875 to 2.500

AP40357  
AP40358

APR40317  
APR40318

AR4041

1.375 to 1.875  
1.875 to 2.500

AP40457  
AP40458

APR40417  
APR40418

AR40312

2.500 to 3.000  
3.000 to 3.800

AP403510  
AP403512

APR403110  
APR403112

AR40412

2.500 to 3.000  
3.000 to 3.800

AP404510  
AP404512

APR404110  
APR404112

AR4032

1.375 to 1.875  
1.875 to 2.500

AP40367  
AP40368

APR40327  
APR40328

AR4042

1.375 to 1.875  
1.875 to 2.500

AP40467  
AP40468

APR40427  
APR40428

AR40322

2.500 to 3.000  
3.000 to 3.500

AP403610  
AP403612

APR403210  
APR403212

AR40422

2.500 to 3.000  
3.000 to 3.500

AP404610  
AP404612

APR404210  
APR404212

§ Weatherproof when used with spring door covers.

† Furnished with cable grip and neoprene bushing.

‡ Hub plates and blank plates may be interchanged to permit conduit feed from bottom or sides.

**1P**

# Configured Arktite® Heavy Duty Power Connectors

Rainproof  
30 to 100 A  
600 VAC/250 VDC  
60-400 hertz

## Heavy-Duty and Voltage Polarized

Configured Arktite® Power Connectors offer the heavy-duty metal construction of our standard Arktite line, *plus* voltage configuration. This combination is the ultimate in pin and sleeve connector reliability and safety. The new Configured Arktite Connector series incorporates a unique voltage polarization system that insures that only receptacles and plugs rated for the same voltage can be physically connected. This assures a safe and correct electrical connection every time. Compliance with the National Electrical Code® article 210-7 requirement for non-interchangeability of receptacles and plugs on the same premises with different voltages is now easier than ever. Equipment damage due to the misapplication of the wrong voltage using these connectors when properly installed can be virtually eliminated.

This new connector series is not intermateable with our standard line of Arktite power connectors, but it utilizes many of the same time-tested construction features that have been the proven standard of excellence in the electrical industry for years. Configured Arktite Power Connectors are available in 3, 4, or 5 pole (includes ground contact) versions for 30, 60, or 100 amp requirements. Every plug and receptacle is marked numerically and color coded for the specific voltage making it simple and easy to determine the proper plug and receptacle combination. A larger ground contact and unique keying system insures that

only the connectors of the same voltage will intermate. Thirteen distinct configurations are available covering virtually every existing voltage in industry.

Configured Arktite Power Connectors are designed for rugged use in the most abusive applications. The unique gasketing system provides a sure seal even in the most adverse environments. They also feature the Crouse-Hinds patented TRI-LOCK™ cable grip that securely locks the cable in place even when subjected to extreme flexing and jerking. The larger ground contact makes first, breaks last, and is bonded to the metal housing

to insure all metal parts are properly grounded. The power contacts are specially designed and located in arc quenching chambers to allow these connectors to be safely disconnected under load. Crouse-Hinds Configured Arktite Power Connectors are designed in compliance with the latest UL, CSA and NEMA standard.

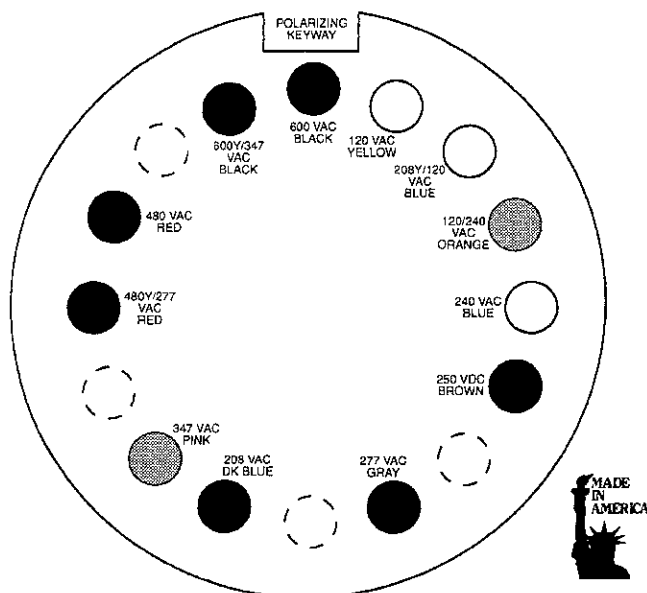
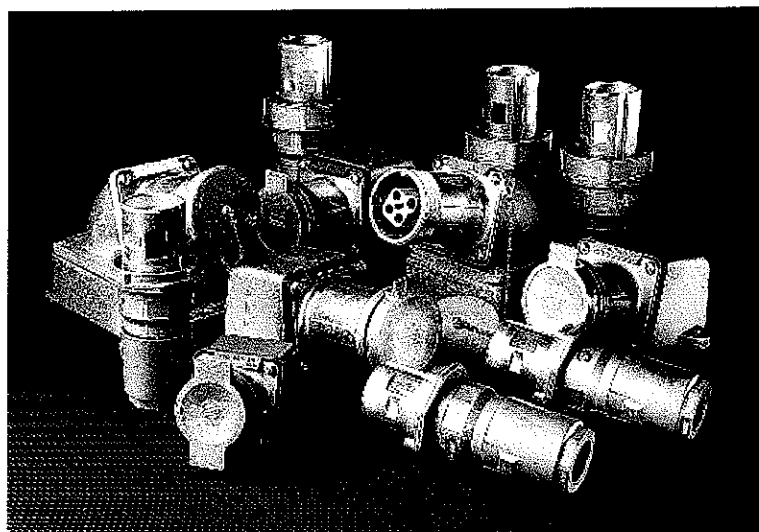
## Applications:

Configured Arktite voltage polarized circuit breaking plugs and receptacles are used:

- to supply power to portable electrically operated devices such as motor-generator sets, compressors, heating and cooling units, welders, conveyors, lighting systems, and similar equipment.
- where temporary power is needed, such as at trailers, building units, heavy machinery, and similar equipment.
- wherever electrical loads must be quickly disconnected from a power source.
- in areas where dust, dirt, moisture, and corrosion are a problem.
- indoors and outdoors in non-hazardous areas of chemical plants, process industry facilities, meat packing plants, manufacturing plants, and similar industrial locations.

## Accessories:

Accessories include a variety of angle adapters, panel adapters, and back boxes for Configured Arktite receptacles. They include protective caps for Configured Arktite plugs and receptacles.



**Face View of Receptacle**

Footnote: ○ indicates ground contact position.  
○ indicates position not used.



# Configured Arktime® Heavy Duty Power Connectors

Rainproof  
30 to 100 A  
600 VAC/250 VDC  
60-400 hertz

1P

## Voltage/Color Configurations

A 16 position 'face' is used to illustrate the grounding contact location for receptacles. To identify the system voltage, identify the housing color and position of the receptacle grounding contact or marking on the polarizer.

## Standard Materials:

- Metallic receptacle housings, plug, and connector bodies – high impact strength copper-free aluminum
- Back boxes – cast aluminum
- Insulators: 3, 4, and 5 pole – fiberglass-reinforced polyester
- Contacts: Pressure screw type – brass
- Polarizers – PBT polyester

## Standard Finishes:

- Aluminum – natural
- Fiberglass-reinforced polyester insulator – gray
- Brass – natural

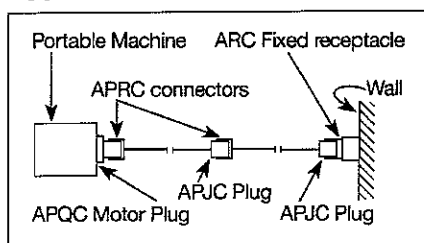
## Certifications and Compliances:

- UL Standards: 1682 and 1686
- CSA Standard: C22.2 No. 182.1

## Electrical Rating Ranges:

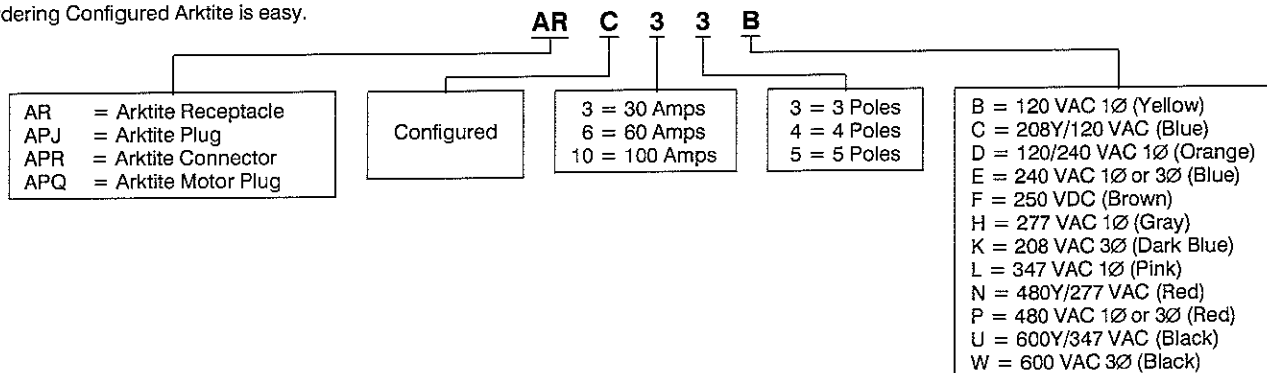
- Voltage – 600 VAC; 60 to 400 hertz; 250 VDC
- Amperes – 30, 60, and 100
- Horsepower Rating – same as standard product. See page 938.

## Typical Installation:



## Catalog Numbering System:

Ordering Configured Arktime is easy.



## Features

Grounding contact is bonded to the receptacle housing.

Each plug contact closely fits the opening of its individual arcing chamber.

Large ground contact is keyed by location to prevent mispolarization.

Simple and easy color, part number, and voltage identification

Wrenching surfaces make Configured Arktime connector quick and easy to assemble.

Simple and easy color, part number, and voltage identification

The arc formed by pulling the plug is instantly snuffed in the deep, confined insulated arcing chamber while the plug contact is still a considerable distance inside. The arc cannot travel over to the other side of the circuit or to the housing.

Easily wired interior assemblies in receptacles and plugs.

Grounding contact is bonded to the plug sleeve.

Configured Arktime connectors' gasketing system provides unsurpassed watertight integrity.

All-aluminum UNI-SHELL™ threaded construction provides added strength to withstand extreme physical abuse.

Configured Arktime's TRI-LOCK™ cable grip has three clamps that tighten around the cable to securely lock it in place, even when subjected to extreme flexing and jerking.

The unique SURE-SEAL™ cable gland provides a complete environmental seal by distributing pressure equally around the circumference of the cable. One size accommodates the complete range of cable diameters.

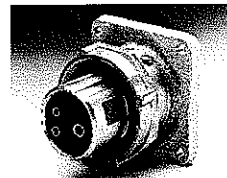
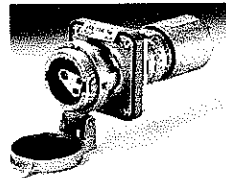
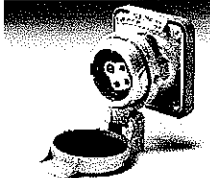
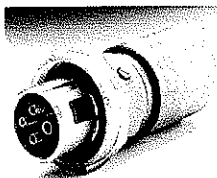
**1P**

# Configured Arktite® Heavy Duty Power Connectors

Rainproof  
30/60 A  
600 VAC/250 VDC  
60-400 hertz

## 30 Amp Plugs, Receptacles, Connectors, Motor Plugs

Heavy-Duty  
Voltage Polarized  
Circuit Breaking  
NEMA 3R  
Rainproof  
UL/CSA



Amps	Poles	Volt Rating	Color	Plug Cat. No.	Receptacle w/Spring Door* Cat. No.	Connector w/Spring Door* Cat. No.	Motor Plug** Cat. No.
30	3	120 VAC 1Ø	Yellow	APJC33B	ARC33B	APRC33B	APQC33B
30	3	240 VAC 1Ø	Blue	APJC33E	ARC33E	APRC33E	APQC33E
30	3	250 VDC	Brown	APJC33F	ARC33F	APRC33F	APQC33F
30	3	277 VAC 1Ø	Gray	APJC33H	ARC33H	APRC33H	APQC33H
30	3	347 VAC 1Ø	Pink	APJC33L	ARC33L	APRC33L	APQC33L
30	3	480 VAC 1Ø	Red	APJC33P	ARC33P	APRC33P	APQC33P
30	4	120/240 VAC 1Ø	Orange	APJC34D	ARC34D	APRC34D	APQC34D
30	4	208 VAC 3Ø	Dark Blue	APJC34K	ARC34K	APRC34K	APQC34K
30	4	240 VAC 3Ø	Blue	APJC34E	ARC34E	APRC34E	APQC34E
30	4	480 VAC 3Ø	Red	APJC34P	ARC34P	APRC34P	APQC34P
30	4	600 VAC 3Ø	Black	APJC34W	ARC34W	APRC34W	APQC34W
30	5	208Y/120 VAC	Blue	APJC35C	ARC35C	APRC35C	APQC35C
30	5	480Y/277 VAC	Red	APJC35N	ARC35N	APRC35N	APQC35N
30	5	600Y/347 VAC	Black	APJC35U	ARC35U	APRC35U	APQC35U

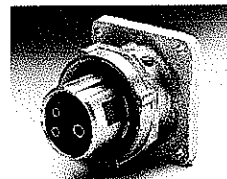
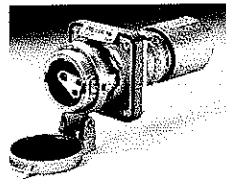
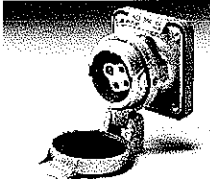
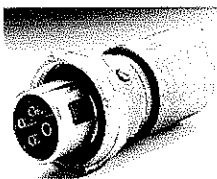
\* To order with threaded capp add suffix -S1

\*\* Protective cap included with APQC Motor Plug

**Back Box Ordering Information – See pages 957 and 958.**

## 60 Amp Plugs, Receptacles, Connectors, Motor Plugs

Heavy-Duty  
Voltage Polarized  
Circuit Breaking  
NEMA 3R  
Rainproof  
UL/CSA



Amps	Poles	Volt Rating	Color	Plug Cat. No.	Receptacle w/Spring Door* Cat. No.	Connector w/Spring Door* Cat. No.	Motor Plug** Cat. No.
60	3	120 VAC 1Ø	Yellow	APJC63B	ARC63B	APRC63B	APQC63B
60	3	240 VAC 1Ø	Blue	APJC63E	ARC63E	APRC63E	APQC63E
60	3	250 VDC	Brown	APJC63F	ARC63F	APRC63F	APQC63F
60	3	277 VAC 1Ø	Gray	APJC63H	ARC63H	APRC63H	APQC63H
60	3	347 VAC 1Ø	Pink	APJC63L	ARC63L	APRC63L	APQC63L
60	3	480 VAC 1Ø	Red	APJC63P	ARC63P	APRC63P	APQC63P
60	4	120/240 VAC 1Ø	Orange	APJC64D	ARC64D	APRC64D	APQC64D
60	4	208 VAC 3Ø	Dark Blue	APJC64K	ARC64K	APRC64K	APQC64K
60	4	240 VAC 3Ø	Blue	APJC64E	ARC64E	APRC64E	APQC64E
60	4	480 VAC 3Ø	Red	APJC64P	ARC64P	APRC64P	APQC64P
60	4	600 VAC 3Ø	Black	APJC64W	ARC64W	APRC64W	APQC64W
60	5	208Y/120 VAC	Blue	APJC65C	ARC65C	APRC65C	APQC65C
60	5	480Y/277 VAC	Red	APJC65N	ARC65N	APRC65N	APQC65N
60	5	600Y/347 VAC	Black	APJC65U	ARC65U	APRC65U	APQC65U

\* To order with threaded cap add suffix -S1

\*\* Protective cap included with APQC Motor Plug

**Back Box Ordering Information – See pages 957 and 958.**

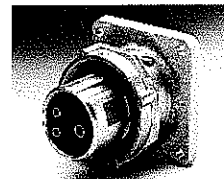
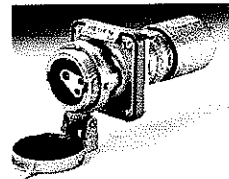
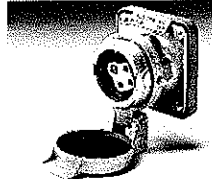
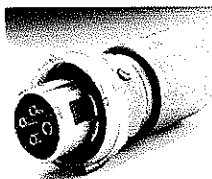
# Configured Arktite® Heavy Duty Power Connectors

Rainproof  
100 A  
600 VAC/250 VDC  
60-400 hertz

1P

## 100 Amp Plugs, Receptacles, Connectors, Motor Plugs

Heavy-Duty  
Voltage Polarized  
Circuit Breaking  
NEMA 3R  
Rainproof  
UL/CSA



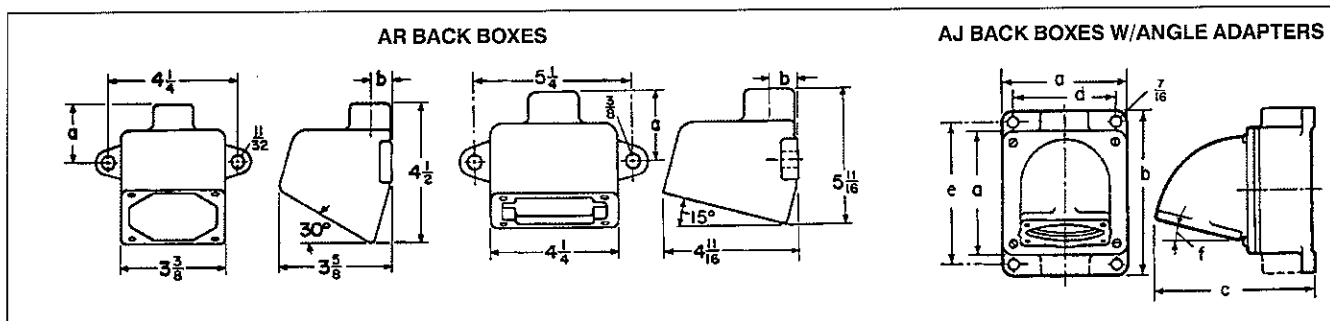
Amps	Poles	Volt Rating	Color	Plug Cat. No.	Receptacle w/Spring Door* Cat. No.	Connector w/Spring Door* Cat. No.	Motor Plug** Cat. No.
100	3	120 VAC 1Ø	Yellow	APJC103B	ARC103B	APRC103B	APQC103B
100	3	240 VAC 1Ø	Blue	APJC103E	ARC103E	APRC103E	APQC103E
100	3	250 VDC	Brown	APJC103F	ARC103F	APRC103F	APQC103F
100	3	277 VAC 1Ø	Gray	APJC103H	ARC103H	APRC103H	APQC103H
100	3	347 VAC 1Ø	Pink	APJC103L	ARC103L	APRC103L	APQC103L
100	3	480 VAC 1Ø	Red	APJC103P	ARC103P	APRC103P	APQC103P
100	4	120/240 VAC 1Ø	Orange	APJC104D	ARC104D	APRC104D	APQC104D
100	4	208 VAC 3Ø	Dark Blue	APJC104K	ARC104K	APRC104K	APQC104K
100	4	240 VAC 3Ø	Blue	APJC104E	ARC104E	APRC104E	APQC104E
100	4	480 VAC 3Ø	Red	APJC104P	ARC104P	APRC104P	APQC104P
100	4	600 VAC 3Ø	Black	APJC104W	ARC104W	APRC104W	APQC104W
100	5	208Y/120 VAC	Blue	APJC105C	ARC105C	APRC105C	APQC105C
100	5	480Y/277 VAC	Red	APJC105N	ARC105N	APRC105N	APQC105N
100	5	600Y/347 VAC	Black	APJC105U	ARC105U	APRC105U	APQC105U

\* To order with threaded cap add suffix -S1

\*\* Protective cap included with APQC Motor Plug

Back Box Ordering Information - See pages 957 and 958.

## Dimensions



AR and AJ Back Boxes/AJC Back Boxes w/Angle Adapters

Cat. No.	Rating	Hub Size	A	B	C	D	E	F
ARE13	30A	1/2	1 27/32	1 1/16				
ARE23	30A	3/4	1 27/32	1 3/16				
ARE33	30A	1	1 31/32	1 5/16				
ARE36	60A	1	2 9/16	1 5/16				
ARE46	60A	1 1/4	2 9/16	1 3/16				
ARE56	60A	1 1/2	2 11/16	1 5/16				
AJ37	60, 100A	1	5 7/8	8	7 1/16	4 7/8	7	15°
AJ47	60, 100A	1 1/4	5 7/8	8	7 1/16	4 7/8	7	15°
AJ57	60, 100A	1 1/2	5 7/8	8	7 1/16	4 7/8	7	15°
AJ67	60, 100A	2	5 7/8	8	8	4 7/8	7	15°

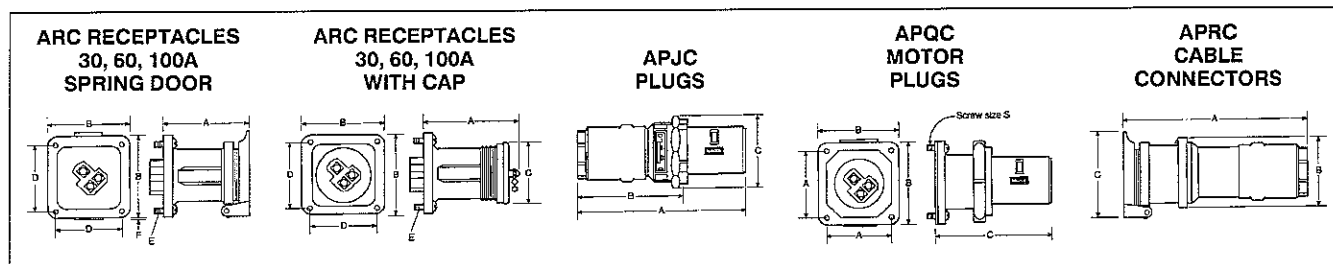
1P Heavy Duty Plugs and Receptacles

1P

# Configured Arktite® Heavy Duty Power Connectors

Rainproof

## Dimensions



### ARC Receptacles

Amps	Housing	A	B	C	D	E	F
30	Spring door	2 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>		2 <sup>29</sup> / <sub>32</sub>	12-24	3 <sup>1</sup> / <sub>4</sub>
30	w/cap	3 <sup>3</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	3	2 <sup>29</sup> / <sub>32</sub>	12-24	
60	Spring door	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>		3 <sup>1</sup> / <sub>2</sub>	5/16-18	9 <sup>3</sup> / <sub>32</sub>
60	w/cap	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub>	3 <sup>11</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>2</sub>	5/16-18	
100	Spring door	5 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>		3 <sup>1</sup> / <sub>2</sub>	5/16-18	1 <sup>3</sup> / <sub>32</sub>
100	w/cap	5 <sup>9</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	5/16-18	

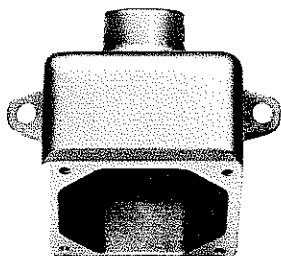
APJC Plugs				APQC Motor Plugs			
Amps	A	B	C	A	B	C	S
30	6 <sup>1</sup> / <sub>2</sub>	4 <sup>13</sup> / <sub>16</sub>	2 <sup>15</sup> / <sub>16</sub>	2 <sup>23</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	12-24
60	8 <sup>1</sup> / <sub>2</sub>	5 <sup>13</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub>	4 <sup>7</sup> / <sub>8</sub>	5/16-18
100	10 <sup>1</sup> / <sub>8</sub>	6 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>8</sub>	5/16-18

APRC Cable Connectors			
Amps	A	B	C
30	8 <sup>7</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>8</sub>	4
60	11 <sup>9</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>4</sub>	4 <sup>13</sup> / <sub>16</sub>
100	13 <sup>1</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>16</sub>

# AR Back Boxes and Accessories for 20, 30, & 60 A Receptacle Housings

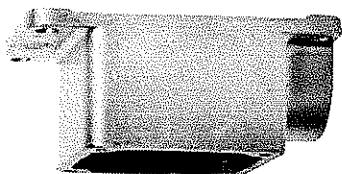
Dimensions Pages 965 and 966

1P



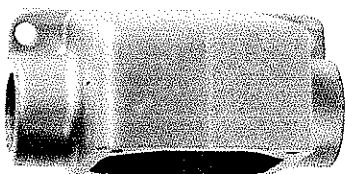
## ARE

Hub Size	20/30 A Cat. #	60 A Cat. #
1/2	ARE13	
3/4	ARE23	
1	ARE33	ARE36
1 1/4		ARE46
1 1/2		ARE56



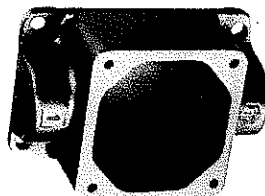
## ARRH

Hub Size	20/30 A Cat. #	60 A Cat. #
1/2	ARRH13	
3/4	ARRH23	
1	ARRH33	ARRH36
1 1/4		ARRH46
1 1/2		ARRH56



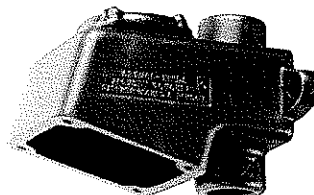
## ARJ

Hub Size	20/30 A Cat. #	60 A Cat. #
1/2	ARJ13	
3/4	ARJ23	
1	ARJ33	ARJ36
1 1/4		ARJ46
1 1/2		ARJ56



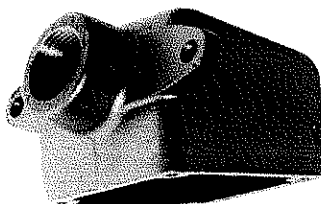
## ARRC

Hub Size	20/30 A Cat. #	60 A Cat. #
1/2	ARRC13	
3/4	ARRC23	
1	ARRC33	ARRC36
1 1/4		ARRC46
1 1/2		ARRC56



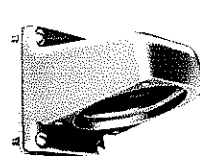
## ARD

Hub Size	20/30 A Cat. #	60 A Cat. #
1/2	ARD13	
3/4	ARD23	
1	ARD33	ARD36
1 1/4		ARD46
1 1/2		ARD56

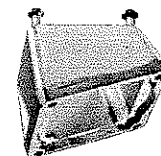


## ARJG

Hub Size	20/30 A Cat. #	60 A Cat. #
1/2	ARJG13	
3/4	ARJG23	
1	ARJG33	ARJG36
1 1/4		ARJG46
1 1/2		ARJG56



For ARRH and ARRC back boxes



For steel panel or cabinet

## AR 15° Angle Adapter

Mounts On	Takes AR Receptacle Housings	Cat. #
ARRH and ARRC back boxes	20 and 30 amp.	AR30
ARRH and ARRC back boxes	60 amp.	AR60
Steel panel or cabinet	60 and 100 amp.	AR610



## Spring Door Assembly

Used With	Cat. #
30 amp, 2, 3 & 4-pole	QE50
60 amp, 2 & 3-pole	QE51
60 amp, 4-pole	QE52
100 amp, 2 & 3-pole	QE53
100 amp, 4-pole	QE54



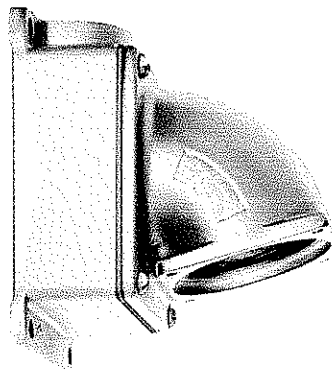
## Cap and Chain

Used With	Cat. #
30 amp, 2, 3 & 4-pole	QE13
60 amp, 2 & 3-pole	QE32
60 amp, 4-pole	QE34
100 amp, 2 & 3-pole	QE62
100 amp, 4-pole	QE64

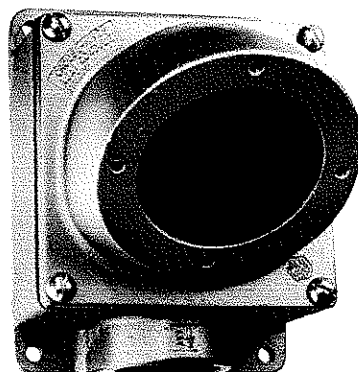
1P Heavy Duty Plugs and Receptacles

# AJ and AJC Back Boxes with Angle Adapters for 60, 100, 200 & 400 A Receptacle Housings AJX Assemblies and Component Parts For 200 and 400 A Receptacle Housings

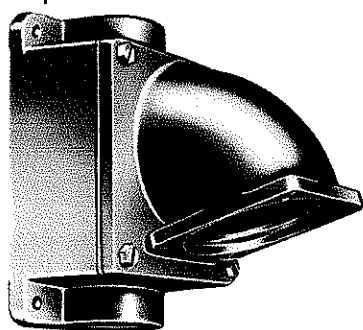
Dimensions Pages 965 and 966



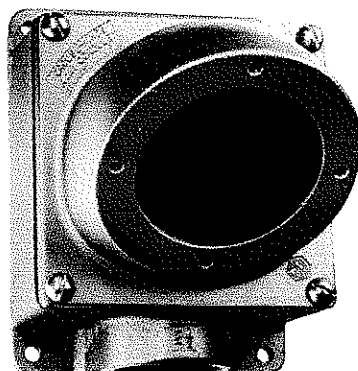
AJ Back Box with 60/100 A Angle Adapter



AJ Back Box with 200/400 A Angle Adapter



AJC Back Box with 60/100 A AJA Angle Adapter



AJC Back Box with 200 A Angle Adapter

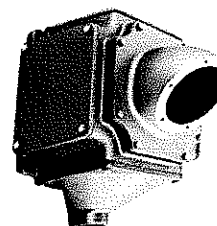
## AJ and AJC Back Boxes<sup>†</sup>

HUB SIZE	TYPE	60 & 100A		200A		400A	
		BOX ONLY	BOX & ADAPTER ASSEMBLY	BOX ONLY	BOX & ADAPTER ASSEMBLY	BOX ONLY	BOX & ADAPTER ASSEMBLY
1"	ONE HUB	AJ56*	AJ37				
	FEED THRU	AJC56*	AJC37				
1 1/4"	ONE HUB	AJ56*	AJ47				
	FEED THRU	AJC56*	AJC47				
1 1/2"	ONE HUB	AJ56	AJ57	AJ71*	AJ58		
	FEED THRU	AJC56	AJC57				
2"	ONE HUB	AJ66	AJ67	AJ71*	AJ68	AJ82*	AJ69
	FEED THRU	AJC66	AJC67				
2 1/4"	ONE HUB			AJ71	AJ78	AJ82*	AJ79
	FEED THRU			AJC71	AJC78		
3"	ONE HUB					AJ82	AJ89
	FEED THRU						
ANGLE ADAPTER		AJA6		AJA1		AJA2	

\*REDUCER SUPPLIED WITH ASSEMBLY

† AJ and AJC back boxes are square, making it possible to install with hub in several positions.

‡ Use AJ89, AJ79 or AJ89 for cables up to 2 - #350MCM, 3 - #300MCM or 4 - #250MCM. For larger cables, use AJX69, etc., listed under assemblies.



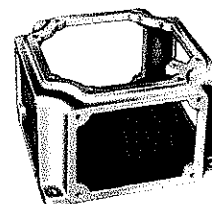
## AJX Assemblies

Back Box with Angle Adapter,  
3 Blank Plates and 1 Hub Plate

Hub Size	400 A Cat. #
2	AJX69
2 1/2	AJX79
3	AJX89
3 1/2	AJX929
4	AJX9210
5	AJX9212

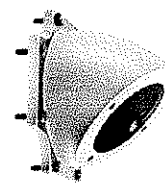
## AJX Component Parts

For use in making up assemblies with arrangements of hub plates (4 required) other than those listed.



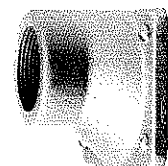
### Back Box

400 A  
Cat. #  
AJX99



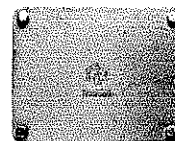
### Angle Adapter

400 A  
Cat. #  
AJ245



### Hub Plate

Hub Size	400 A Cat. #
2	YYP96
2 1/2	YYP97
3	YYP98
3 1/2	YYP99
4	YYP910
5	YYP9012



### Blank Plate

400 A Cat. #  
YYP900

# Wire Mesh Grips CPK Caps For Arktite® Plugs

1P

## Application:

Wire mesh grips are used:

- to provide secure cable termination
- to extend cable life
- with 20, 200 and 400 ampere plugs

## Features:

- Eliminate sharp radius of cable bend at the point where cable enters plug, thereby reducing cable failure
- Absorb longitudinal stresses placed on the point of termination caused by pulling the cable
- Gripping action increases in direct proportion to amount of tension applied to cable

## Standard Materials:

- Stainless steel wire braid

## Standard Finishes:

- Natural



## Wire Mesh Grips For Arktite Plugs

### Ordering Information:

To purchase wire mesh grips order separately by grip Cat. No. from table.

Plug Cable Range	Grip Range	Nominal Grip Length – Inches	Grip Cat. #
For use with 20, 200 & 400 A units only			
	0.500 to 0.625	4%	K063
0.500 to 0.875	0.625 to 0.750	6	K075
	0.750 to 0.875	5%	K088
	0.875 to 1.000	6	K100
0.875 to 1.375	1.000 to 1.188	5%	K119
	1.188 to 1.375	7 1/4	K138
1.375 to 1.875	1.375 to 1.625	8	K163
	1.625 to 1.875	11	K188
1.875 to 2.500	1.875 to 2.000	10	K200
	2.000 to 2.250	11 3/4	K225

## Application:

CPK caps for Arktite plugs are used:

- where portable equipment is on a standby basis and plugs are not in use
- to effectively protect insulation and contacts from excessive moisture, dirt, dust and corrosion
- with 30, 60, 100 and 200 ampere plugs with fastening ring and standard 200 ampere plugs for the clamp door housing

## Standard Materials:

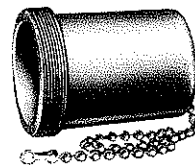
- Copper-free aluminum

## Standard Finishes:

- Natural

## CPK Caps For Arktite Plugs

Amp. Rating of Plug	No. Poles	Cat. #
30	2, 3 or 4	CPK13
30	5	CPK32
60	2 or 3	CPK32
60	4	CPK34
100	2 or 3	CPK62
100	4	CPK64
200	3	CPK102
200	4	CPK104



For 30, 60, 100, 200 Ampere plugs

# Non-Metallic Arktite® Heavy Duty Circuit Breaking Plugs and Receptacles

Made of Krydon® Material, 600 VAC/250 VDC, 50-400 hertz;

Watertight  
Corrosion-Resistant  
NEMA 4X  
Dimensions Pg. 961

## Application:

Arktite circuit breaking plugs, receptacles, cord connectors and motor plugs are used:

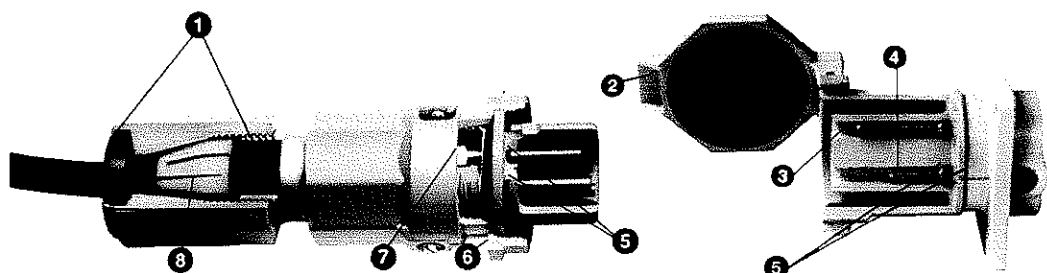
- to supply power to portable electrical devices such as welders, motors, pumps, conveyors and other similar equipment
- where electrical loads must be quickly disconnected from power sources
- in areas where severe corrosion, hose down, moisture, dirt and dust are problems
- indoors and outdoors in non-hazardous areas of chemical plants, sewage treatment facilities, cement plants, pulp and paper plants, food processing plants and other similar industries

## Features:

- Plugs, receptacles, cord connectors, and motor plugs are molded of *Krydon* fiberglass-reinforced polyester material which is highly resistant to corrosion, heat, weathering and physical abuse
- ① 2-stage cord sealing system positively grips cord and protects against environmental contaminants
- ② Spring door provides environmental protection of receptacle
- Elastomeric snap-on caps provide environmental protection of receptacles and cord connectors
- Threaded construction allows quick assembly and disassembly for installation or maintenance
- ③ Grounding contact circuit is made first and broken last
- ④ Contact design provides multiple points of electrical contact for full-load circuit breaking capability
- Total interchangeability with all existing *Arktite* products for comparable ratings and configurations
- ⑤ Unique environmental sealing system includes o-ring gaskets on all contacts and between housing parts for NEMA 4 integrity
- ⑥ Threaded clamping ring provides plug retention
- ⑦ Pressure contact wire terminals are standard. Crimp/solder terminals are optional
- NPQ motor plugs and NPR cable connectors offer reversed interior capability
- ⑧ Unique cord and cable gripping system provides positive strain relief

## Interchangeability of Plugs With Other Non-Hazardous and Hazardous Location Receptacles:

- Plugs listed for use with NRE/NREA assemblies are standard NPJ *Arktite* plugs. Other standard APJ and CPH plugs of the



same rating, style and number of poles may be used with NR receptacles, as well as with AR and AREA, receptacles listed in Section 1P, with DR receptacles listed in section 2P, with DBR, NBR, NSR, WSR, CSR, WSQC, and WSRD receptacles listed in Section 3P and with FSQ, EPC, FSQC, W2SR, C2SR and EPCB receptacles listed in Section 4P.

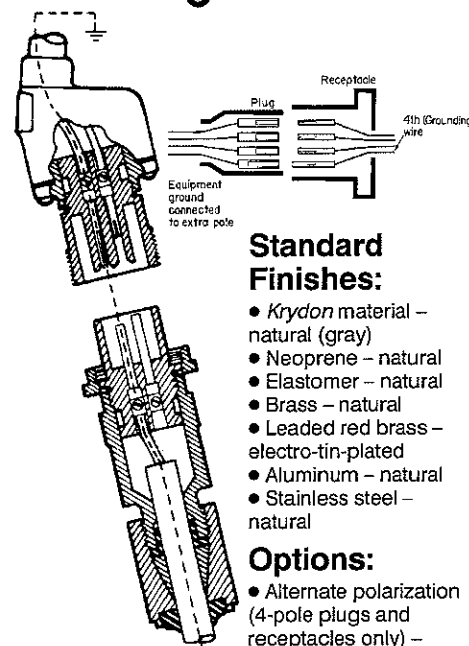
- Portable equipment, suitable for locations and equipped with the proper NPJ plug, can be used with non-hazardous AR receptacles; with DBR and WSR interlocked receptacles located in non-hazardous locations; with EPC, EPCB and FSQC receptacles for Class I, Groups B, C, D hazardous locations; with DR and DBR receptacles for Class II, Groups F, G hazardous locations; and with NBR/NSR, CSR interlocked receptacles for hose down and corrosive locations.

## Grounding:

- NPJ plugs are Style 2, which includes a grounding conductor in the flexible cord or cable that is electrically connected to the extra (grounding) pole
- NR receptacles are Style 2, in which the ground connection is made before line and load poles engage, and is broken after line and load poles disengage.
- The National Electrical Code® and Canadian Electrical Code requires that under conditions favorable to corrosion, the grounding conductor for enclosures and equipment be of copper or other corrosion-resistant material in alternating current systems. This necessitates running another conductor, usually of copper, back to the common grounding electrode. This may be run through the conduit containing the circuit conductors. At the receptacle, this grounding conductor should be connected to the extra (grounding) pole by the pressure connector provided for that purpose. Where such an extra ground conductor is required, Style 2 receptacles should be used.

## Standard Materials:

- Housing, interiors, spring doors, clamping rings – *Krydon* fiberglass-reinforced polyester material
- Gaskets and o-rings – neoprene
- Cable clamping basket – nylon
- Contacts – pressure – brass; crimp/solder – leaded brass
- Snap-on cap – molded elastomer
- Back boxes – copper-free aluminum



Style 2 – Typical 3-wire, 4-pole plug and receptacle

## Standard Finishes:

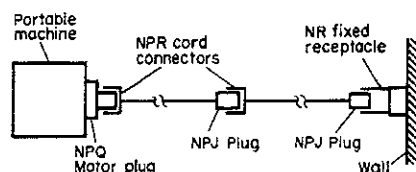
- *Krydon* material – natural (gray)
- Neoprene – natural
- Elastomer – natural
- Brass – natural
- Leaded red brass – electro-tin-plated
- Aluminum – natural
- Stainless steel – natural

## Options:

- Alternate polarization (4-pole plugs and receptacles only) – receptacle interior rotated 22½ degrees to right and plug changed to match – add suffix S4 to Cat. No.
- Crimp/solder terminals – add suffix T to Cat. No.
- *Corro-free*™ epoxy powder coat on back boxes and angle adapters – information on request

## Certifications and Compliances:

- UL Standard: 1682
- UL 1010 hazardous locations (NPJ plug only)
- Wet and damp locations, watertight
- CSA Standard C22.2 No. 182.1



# Arktite® Receptacle Assemblies and Housings, Motor Plugs, Plugs and Cord Connectors Made of Krydon® Material

1P

## Dimensions

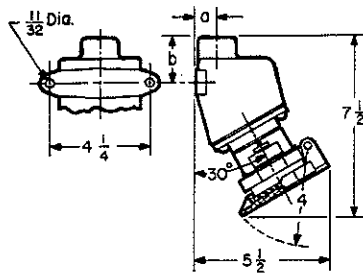


Fig. 1 -  
30 A Receptacle Assemblies

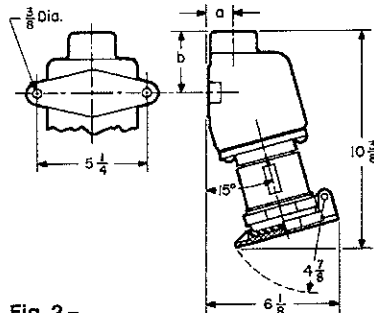


Fig. 2 -  
60 A Receptacle Assemblies

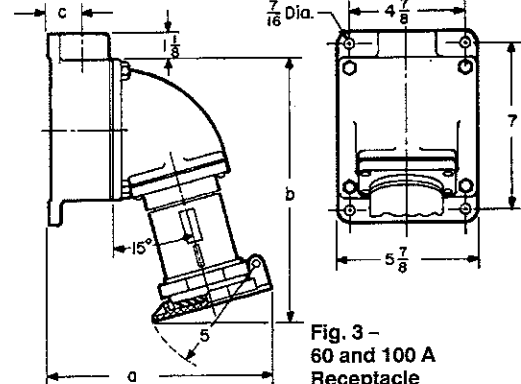


Fig. 3 -  
60 and 100 A  
Receptacle  
Assemblies

NRE 30 and 60 A Assemblies - Fig. 1 NREA 60 and 100 A Assemblies -  
and 2 Fig. 3

Hub Size	Dimension a		Dimension b		Dim.	60 A Hub Size		100 A Hub Size	
	30 A	60 A	30 A	60 A		1, 1 1/4, 1 1/2	1 1/4, 1 1/2	2	
3/4	1 3/16		1 7/8		a	9	9 1/4	9 13/16	
1	1 5/16	1 5/16	2	2 9/16	b	11	12	12	
1 1/4		1 3/16		2 5/8	c	1 15/16	1 9/16	1 9/16	
1 1/2		1 5/16		2 11/16					

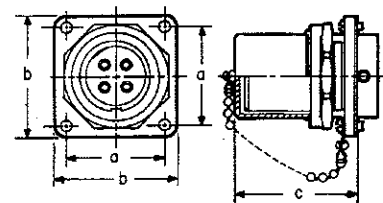


Fig. 6 - NPQ Motor Plugs

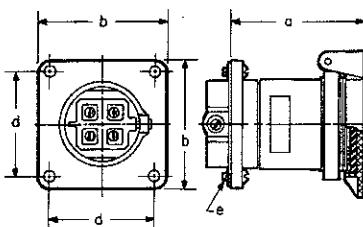


Fig. 4 -  
Spring Door Housings

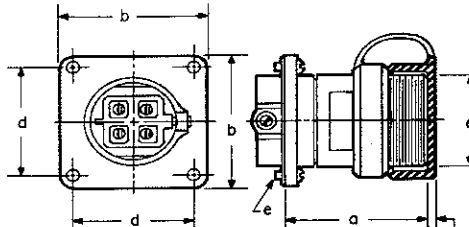


Fig. 5 -  
Housings with Cap

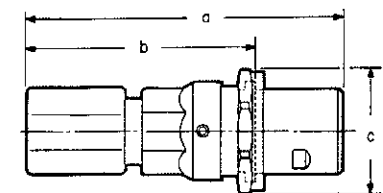


Fig. 7 - NPJ Plugs

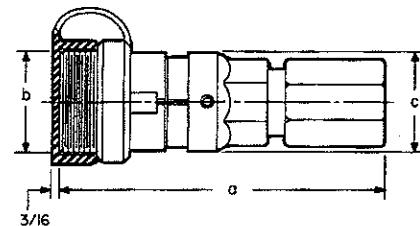


Fig. 8 - NPR Cord Connectors

Amps	No. Poles	Housing	a	b	c	d	e
30	3 or 4	Spring Door	3 1/4	3 3/8	—	2 3/4	12-24
	3 or 4	Open	2 13/16	3 3/8	2 9/16	2 3/4	12-24
	3	Spring Door	4 1/2	4 1/4	—	3 1/2	5/16-18
	4	Spring Door	4 1/2	4 1/4	—	3 1/2	5/16-18
60	3	Open	4 1/16	4 1/4	2 15/16	3 1/2	5/16-18
	4	Open	4 1/16	4 1/4	3 1/4	3 1/2	5/16-18
	3	Spring Door	5 3/4	4 1/4	—	3 1/2	5/16-18
	4	Spring Door	5 3/4	4 1/4	—	3 1/2	5/16-18
100	3	Open	5 5/16	4 1/4	3 3/16	3 1/2	5/16-18
	4	Open	5 5/16	4 1/4	3 7/16	3 1/2	5/16-18

Amps/Poles	a	b	c
<b>NPQ Motor Plugs - Fig. 6</b>			
30/3 or 4	2 3/4	3 3/8	2 15/16
60/3 or 4	3 1/2	4 1/4	4 5/16
100/3 or 4	3 1/2	4 1/4	5 7/16
<b>NPJ Plugs - Fig. 7</b>			
30/3 or 4	8 1/2	7	3 3/16
60/3	9 1/2	6 13/16	3 3/8
60/4	9 1/2	6 13/16	4
100/3	11 1/4	7 3/4	4
100/4	11 1/4	7 3/4	4 1/4
<b>NPR Cord Connectors - Fig. 8</b>			
30/3 or 4	8 7/8	2 9/16	2 5/8
60/3	9 3/4	2 15/16	2 15/16
60/4	9 3/4	3 1/4	2 15/16
100/3	11 1/2	3 3/16	3 5/16
100/4	11 1/2	3 7/16	3 5/16

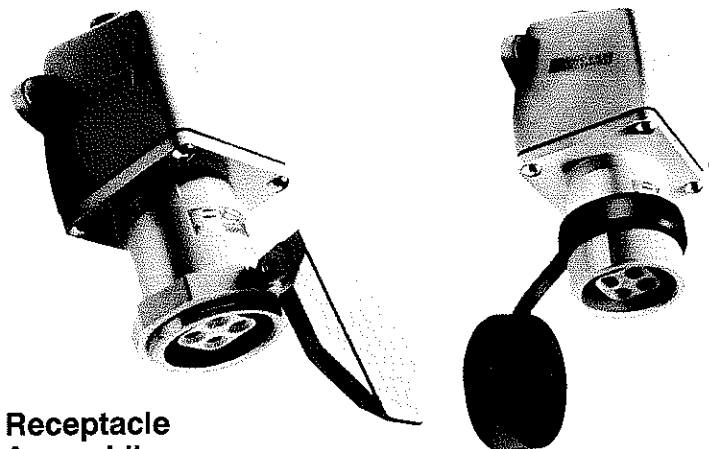
1P

# Non-Metallic Arktite® Heavy Duty Circuit Breaking Receptacle Assemblies and Housings

Made of Krydon® Material, 30 A, 60 A and 100 A  
600 VAC/250 VDC, 50\*\*-400 hertz

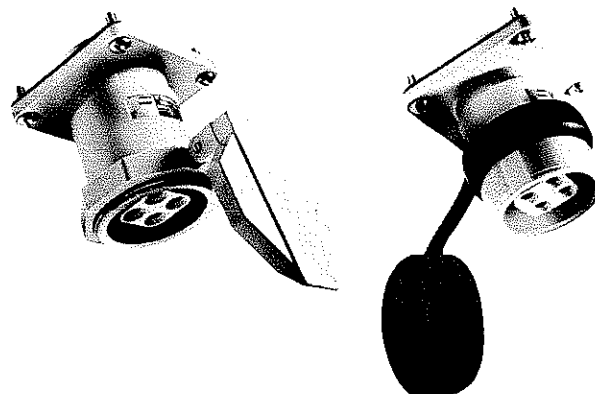
Watertight\$  
Corrosion-Resistant  
NEMA 4X  
Dimensions Page 961

## Receptacle Assembly



Receptacle Assemblies

## Receptacle



NR Housings Only

With ARE Back Boxes – See NOTES

Amps	Description	Hub Size	Snap-on Cap/ Spring Door Cat. # ①
30	2-wire, 3-pole	¾ 1	NRE3322 NRE3323
	3-wire, 4-pole	¾ 1	NRE3422 NRE3423
	2-wire, 3-pole	1 1¼	NRE6323 NRE6324
	3-wire, 4-pole	1¼ 1½	NRE6424 NRE6425

Snap-on Cap/  
Spring Door  
Cat. # ①

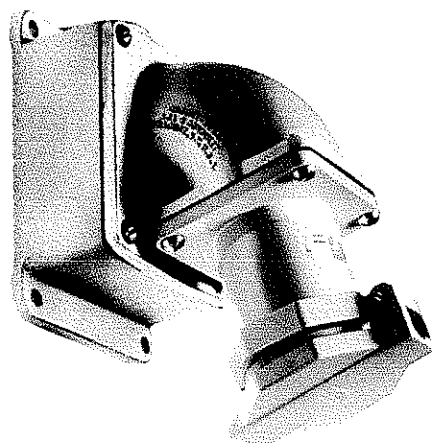
NR332

NR342

NR632

NR642

## With AJ Back Boxes† and Angle Adapters – See NOTES



Amps	Description	Hub Size	Snap-on Cap/ Spring Door Cat. # ①	Snap-on Cap/ Spring Door Cat. # ①
60	2-wire, 3-pole	1 1¼	NREA6323 NREA6324	NR632
	3-wire, 4-pole	1¼ 1½	NREA6424 NREA6425	NR642
	2-wire, 3-pole	1¼ 1½	NREA10324 NREA10325	NR1032
	3-wire, 4-pole	1½ 2	NREA10425 NREA10426	NR1042

### NOTES:

For listing of additional back boxes, see pages 957 and 958.  
60A assemblies with AJ back boxes are used when additional wiring space is required.

© Krydon Arktite Receptacles are supplied with both a spring door and snap-on cap.

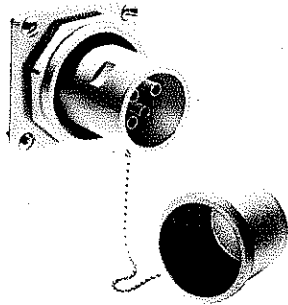
# Non-Metallic Arktite® Heavy Duty Circuit Breaking Motor Plugs, Plugs & Cord Connectors

Made of Krydon® Material, 30 A, 60 A and 100 A  
600 VAC/250 VDC, 50\*\*–400 hertz

Watertight§  
Corrosion-Resistant  
NEMA 4X  
Dimensions Page 961

**1P**

## Motor Plugs



## Mating NPQ Motor Plugs

Motor  
Plug  
Cat. #

## Plugs



## Mating NPJ Plugs

Cord  
Dia.

Plug  
Cat. #

## Connectors



## NPR Cord Connectors

Cord  
Connector  
Cat. #

NPQ338

0.55-0.70  
0.70-0.85

NPJ3383  
NPJ3384

NPR3363  
NPR3364

NPQ348

0.55-0.70  
0.70-0.85

NPJ3483  
NPJ3484

NPR3463  
NPR3464

NPQ638

0.75-1.07  
1.07-1.35

NPJ6384  
NPJ6385

NPR6364  
NPR6365

NPQ648

0.75-1.07  
1.07-1.35

NPJ6484  
NPJ6485

NPR6464  
NPR6465

Motor  
Plug  
Cat. #

Cord  
Dia.

Plug  
Cat. #

Cord  
Connector  
Cat. #

NPQ638

0.75-1.07  
1.07-1.35

NPJ6384  
NPJ6385

NPR6364  
NPR6365

NPQ648

0.75-1.07  
1.07-1.35

NPJ6484  
NPJ6485

NPR6464  
NPR6465

NPQ1038

0.93-1.21  
1.21-1.50

NPJ10386  
NPJ10387

NPR10366  
NPR10367

NPQ1048

0.93-1.21  
1.21-1.50

NPJ10486  
NPJ10487

NPR10466  
NPR10467

§ Wet and damp locations when used with spring door or snap-on cap, watertight when used with QE threaded cap.

‡ AJ back boxes are square, making it possible to install with hub in several positions.

\*\* For use on systems less than 60 hertz the receptacles, plugs and connectors are for disconnect use only.

# AR Receptacles and Housings

## Dimensions

20 and 5-pole 30 Ampere –  
Spring door

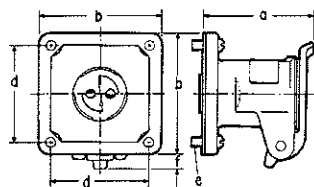


Fig. 1

30, 60 and 100 Ampere –  
Spring door

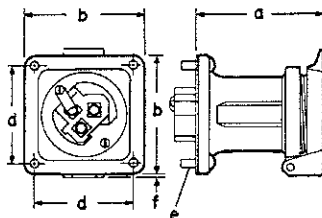


Fig. 3

200 Ampere

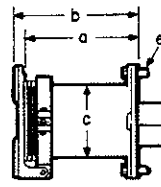
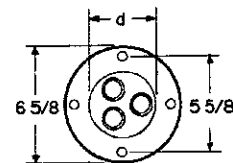


Fig. 5



20 and 5-pole 30 Ampere –  
Open and with cap

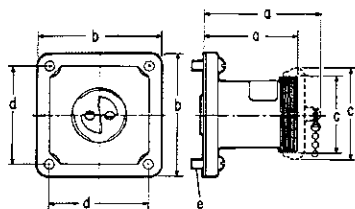


Fig. 2

30, 60 and 100 Ampere –  
Open and with cap

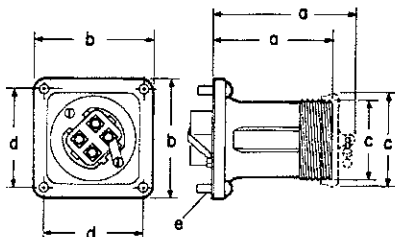


Fig. 4

400 Ampere

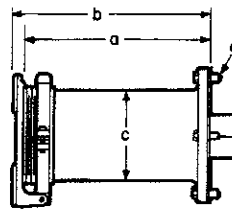
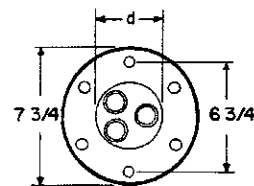


Fig. 6



### Receptacle

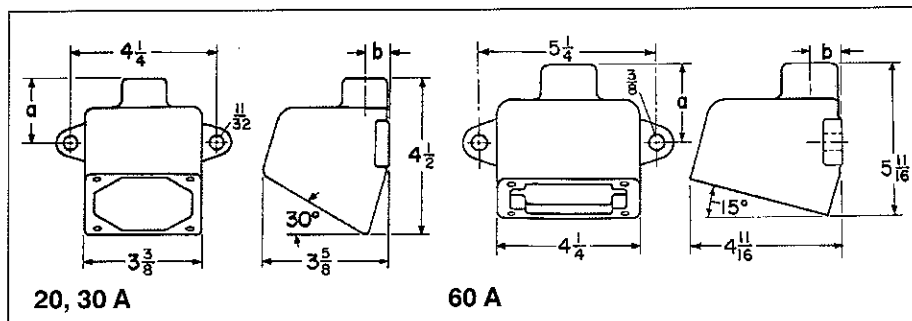
Amps	No. Poles	Housing	a	b	c	d	e	f	Fig. No.
20	2	Spring door	3 1/16	3 3/8		2 23/32	12-24	5/16	1
	2	Open	2 5/8	3 3/8	2 1/8	2 23/32	12-24		2
	2	With cap	3 1/4	3 3/8	2 9/16	2 23/32	12-24		2
30	2, 3, or 4	Spring door	2 7/8	3 3/8		2 23/32	12-24	1 1/32	3
	5	Spring door	3 3/8	3 3/8		2 23/32	12-24	3/4	1
	2, 3, or 4	Open	2 9/16	3 3/8	2 9/16	2 23/32	12-24		4
	5	Open	3 1/8	3 3/8	2 15/16	2 23/32	12-24		2
	2, 3, or 4	With cap	3 3/16	3 3/8	3	2 23/32	12-24		4
	5	With cap	3 1 1/16	3 3/8	3 3/8	2 23/32	12-24		2
60	2 or 3	Spring door	4 1/4	4 1/4		3 1/2	5/16-18	3/32	3
	4	Spring door	4 1/4	4 1/4		3 1/2	5/16-18	9/32	3
	2 or 3	Plain	3 15/16	4 1/4	2 15/16	3 1/2	5/16-18		4
	4	Plain	3 15/16	4 1/4	3 1/4	3 1/2	5/16-18		4
	2 or 3	With cap	4 1/2	4 1/4	3 3/8	3 1/2	5/16-18		4
	4	With cap	4 1/2	4 1/4	3 1 1/16	3 1/2	5/16-18		4
100	5	With cap	3 15/16	4 1/4	4 3/8	3 1/2	5/16-18		4
	2 or 3	Spring door	5 1/4	4 1/4		3 1/2	5/16-18	9/32	3
	4	Spring door	5 1/4	4 1/4		3 1/2	5/16-18	1 3/32	3
	2 or 3	Open	4 15/16	4 1/4	3 3/16	3 1/2	5/16-18		4
	4	Open	4 15/16	4 1/4	3 7/16	3 1/2	5/16-18		4
	2 or 3	With cap	5 9/16	4 1/4	3 1 1/16	3 1/2	5/16-18		4
200	4	With cap	5 9/16	4 1/4	3 7/8	3 1/2	5/16-18		4
	3	Spring door	7	7 1/2	4 3/16	3 1/4	3/8-16		5
400†	4	Spring door	7	7 1/2	4 9/16	3 3/8	3/8-16		5
	3	Spring door	11 1/8	11 7/8	5 3/16	4 3/16	3/8-16		6
	4	Spring door	11 1/8	11 7/8	5 13/16	4 1 1/16	3/8-16		6

† For extra large cable.

# Back Boxes

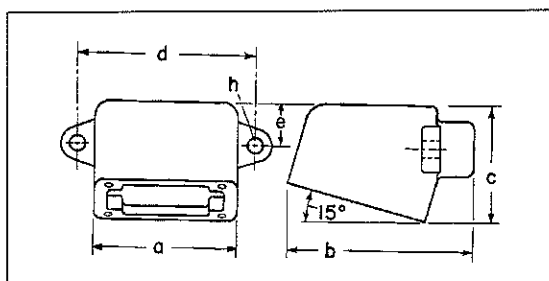
## Dimensions

1P



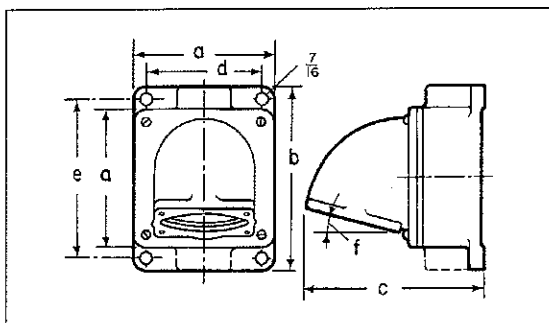
### ARE

Cat. #	Rating	Size	a	b
13	20, 30A	1/2	1 <sup>27</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>
23	20, 30A	3/4	1 <sup>27</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>16</sub>
33	20, 30A	1	1 <sup>31</sup> / <sub>32</sub>	1 <sup>5</sup> / <sub>16</sub>
36	60 A	1	2 <sup>9</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>16</sub>
46	60 A	1 1/4	2 <sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>
56	60 A	1 1/2	2 <sup>11</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>16</sub>



### ARJG

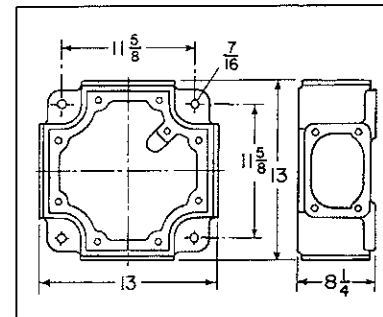
Cat. #	Rating	Size	a	b	c	d	e	h Dia.
13	20, 30A	1/2	3 <sup>3</sup> / <sub>8</sub>	4 <sup>15</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>32</sub>
23	20, 30A	3/4	3 <sup>3</sup> / <sub>8</sub>	4 <sup>15</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>32</sub>
33	20, 30A	1	3 <sup>3</sup> / <sub>8</sub>	4 <sup>19</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>32</sub>
36	60 A	1	4 <sup>1</sup> / <sub>4</sub>	5 <sup>5</sup> / <sub>8</sub>	4 <sup>11</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	3 <sup>5</sup> / <sub>8</sub>
46	60 A	1 1/4	4 <sup>1</sup> / <sub>4</sub>	5 <sup>11</sup> / <sub>16</sub>	4 <sup>11</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	3 <sup>5</sup> / <sub>8</sub>
56	60 A	1 1/2	4 <sup>1</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>4</sub>	4 <sup>11</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	3 <sup>5</sup> / <sub>8</sub>



### AJ and AJC

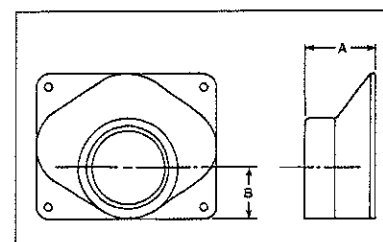
With 60, 100, 200 and 400 Ampere Angle Adapters

Cat. #	Rating	Size	a	b	c	d	e	f
37, 47, 57	60, 100 A	1, 1 1/4, 1 1/2	5 <sup>5</sup> / <sub>8</sub>	8	7 <sup>7</sup> / <sub>16</sub>	4 <sup>7</sup> / <sub>8</sub>	7	15°
67	60, 100A	2	5 <sup>5</sup> / <sub>8</sub>	8	8	4 <sup>7</sup> / <sub>8</sub>	7	15°
58, 68, 78	200 A	1 1/2, 2, 2 1/2	8	10 <sup>3</sup> / <sub>4</sub>	9 <sup>7</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>2</sub>	45°
69, 79, 89	400 A	2, 2 1/2, 3	9	11 <sup>5</sup> / <sub>8</sub>	11 <sup>13</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>8</sub>	45°



### AJX Back Body

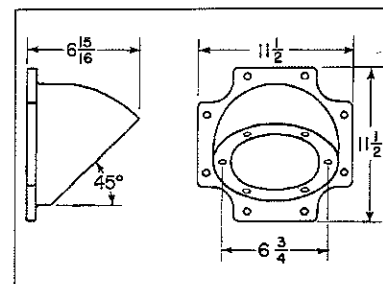
400 Amperes

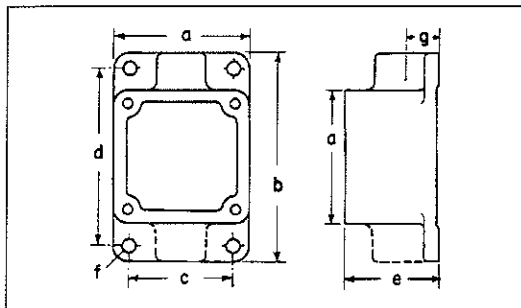


### Hub Plate

	Hub Size	"A"	"B"
YYP96	2	3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>
YYP97	2 1/2	3 <sup>3</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>16</sub>
YYP98	3	3 <sup>7</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>16</sub>
YYP99	3 1/2	3 <sup>7</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>16</sub>
YYP910	4	3 <sup>7</sup> / <sub>8</sub>	2 <sup>13</sup> / <sub>16</sub>
YYP9012	5	4 <sup>5</sup> / <sub>8</sub>	3 <sup>7</sup> / <sub>16</sub>

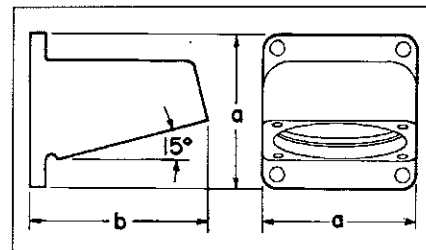
### AJ Angle Adapter





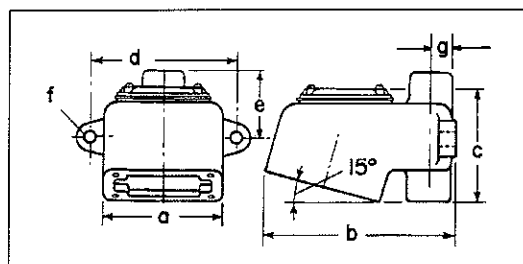
### ARRC and ARRH

Cat. #	Rating	Size	a	b	c	d	e	f	Dia.	g
13	20/30 A	1/2	3 3/8	5 5/16	2 5/8	4 9/16	2 1/4	1 1/32	1 1/16	1 1/16
23	20/30 A	3/4	3 3/8	5 5/16	2 5/8	4 9/16	2 1/4	1 1/32	1 1/32	1 3/16
33	20/30 A	1	3 3/8	5 5/16	2 5/8	4 9/16	2 1/4	1 1/32	1 1/32	1 5/16
36	60 A	1	4 1/4	6 1/2	3 1/2	5 3/4	3 1/8	7/16	1 3/8	1 3/8
46	60 A	1 1/4	4 1/4	6 1/2	3 1/2	5 3/4	3 1/8	7/16	1 3/8	1 3/8
56	60 A	1 1/2	4 1/4	6 1/2	3 1/2	5 3/4	3 1/8	7/16	1 3/8	1 3/8



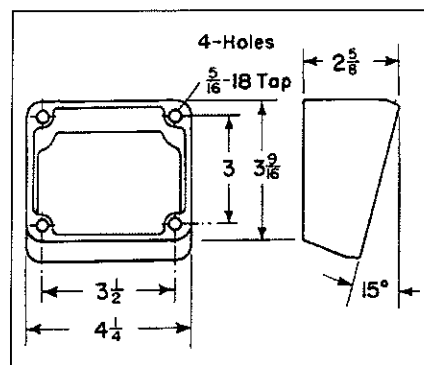
### AR30 and AR60 Angle Adapters

Cat. #	Rating	a	b
AR30	20/30 A	3 3/8	4 1/8
AR60	60 A	4 1/4	4 15/16

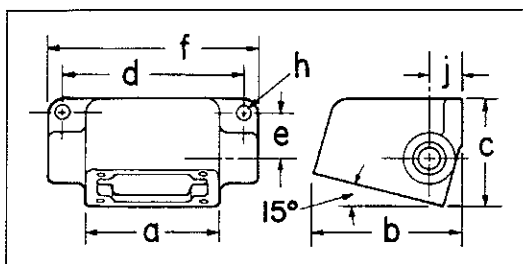


### ARD

Cat. #	Rating	Size	a	b	c	d	e	f	Dia.	g
13	20/30 A	1/2	3 3/8	5 5/16	3 23/32	4 1/4	1 27/32	1 1/32	1 1/16	1 1/16
23	20/30 A	3/4	3 3/8	5 5/16	3 23/32	4 1/4	1 27/32	1 1/32	1 3/16	1 3/16
33	20/30 A	1	3 3/8	5 5/16	3 23/32	4 1/4	1 27/32	1 1/32	1 5/16	1 5/16
36	60 A	1	4 1/4	7 1/16	5 3/4	5 1/8	2 3/4	3/8	1 5/16	1 5/16
46	60 A	1 1/4	4 1/4	7 1/16	5 3/4	5 1/8	2 3/4	3/8	1 5/16	1 5/16
56	60 A	1 1/2	4 1/4	7 1/16	5 3/4	5 1/8	2 3/4	3/8	1 5/16	1 5/16



### AR610 Angle Adapter



### ARJ

Cat. #	Rating	Size	a	b	c	d	e	f	h	Dia.	j
13	20/30 A	1/2	3 3/8	3 3/8	2 3/4	4 5/8	1 7/32	5 5/16	1 1/32	1 1/32	1 5/16
23	20/30 A	3/4	3 3/8	3 3/8	2 3/4	4 5/8	1 7/32	5 5/16	1 1/32	1 1/32	1 5/16
33	20/30 A	1	3 3/8	3 3/8	2 3/4	4 5/8	1 7/32	5 5/16	1 1/32	1 1/32	1 5/16
36	60 A	1	4 1/4	4 11/16	4 11/16	5	1 23/32	6 3/8	3/8	3/8	1 5/16
46	60 A	1 1/4	4 1/4	4 11/16	4 11/16	5	1 23/32	6 3/8	3/8	3/8	1 5/16
56	60 A	1 1/2	4 1/4	4 11/16	4 11/16	5	1 23/32	6 3/8	3/8	3/8	1 5/16

# APC Arktime® Circuit Breaking§ Cable Extension Connectors

Weatherproof

1P

20, 30, 60 & 100 A, 200 & 400 A  
600 VAC/250 VDC, 50\*\*-400 hertz

## Application:

APC cable connectors are used:

- to make up heavy duty extension cable sets

## Features:

- Consist of standard AP or APJ plugs and APR cable connectors for attachment to cord or cable.
- Means are provided to securely clamp plugs to receptacles preventing entrance of water and accidental disengagement

## Standard Materials:

- Plug and cable connector exteriors – copper-free aluminum
- Insulation – fiberglass-reinforced polyester
- Pressure, solder and binding screw contacts – brass
- Crimp solder contacts – leaded red brass

## Standard Finishes:

- Copper-free aluminum – natural
- Brass – natural
- Fiberglass-reinforced polyester – natural (red)
- Leaded red brass – electro-tin-plated

## Options:

Available with these assemblies:

- Special polarity (add suffix S4 to Cat. No.). See page 938 for details.

## Certifications and Compliances:

- UL Standard: 1682
- CSA Standard: C22.2 No. 182.1

NOTE: For general information on application, features and grounding, refer to pages 936 and 937.

\* Pressure connectors are standard. Crimp/solder terminators are optionally available for 2, 3 and 4-pole 30 ampere, 3 and 4-pole 60 and 100 ampere. For details, see table on page 938. To specify, add the suffix "T" to the catalog number. For example: APC3355-T (Connector); APR3355-T (Cable Connector); APJ3375-T (Plug).

† These dimensions are approximate and vary with cable size.

\*\* For use on systems less than 60 hertz, the receptacles, plugs and connectors are for disconnect use only.

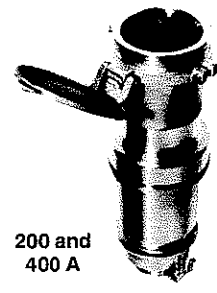
§ 400 amp units are for service disconnect use only.



20 and 30 (5-pole) A



30 (2, 3 and 4-pole),  
60 and 100 A



200 and  
400 A

## Style 1

### Grounded Through Shell

Complete Cat. #	Amps	Description	Cable Dia.	Plug Cat. #	Cable Connector Cat. #
APC2251	20	2-wire,	0.250 to 0.500	APJ2271	APR2251
APC2253		2-pole	0.500 to 0.875	APJ2273	APR2253
APC3253	30	2-wire,*	0.60 to 0.88	APJ3275	APR3253
APC3255		2-pole	0.87 to 1.02		APR3255
APC3353		3-wire,*	0.60 to 0.88	APJ3375	APR3353
APC3355		3-pole	0.87 to 1.02		APR3355
APC3453		4-wire,*	0.60 to 0.88	APJ3475	APR3453
APC3455		4-pole	0.87 to 1.02		APR3455
APC3553	60	5-wire,	0.60 to 0.88	APJ3575	APR3553
APC3555		5-pole	0.87 to 1.20		APR3555
APC6253		2-wire,	0.75 to 0.88	APJ6275	APR6253
APC6255		2-pole	0.87 to 1.37		APR6255
APC6353		3-wire,*	0.75 to 0.88	APJ6375	APR6353
APC6355		3-pole	0.87 to 1.37		APR6355
APC6453	100	4-wire,*	0.75 to 0.88	APJ6475	APR6453
APC6455		4-pole	0.87 to 1.37		APR6455
APC10255		2-wire,	1.00 to 1.38	APJ10277	APR10255
APC10257		2-pole	1.37 to 1.50		APR10257
APC10355		3-wire,*	1.00 to 1.38	APJ10377	APR10355
APC10357		3-pole	1.37 to 1.50		APR10357
APC10455	400§	4-wire,*	1.00 to 1.38	APJ10477	APR10455
APC10457		4-pole	1.37 to 1.50		APR10457

### Wire Well Takes .56" Maximum Conductor Size

APC20315	200	3-wire,	0.875 to 1.375	AP20355	APR20315
APC20317		3-pole	1.375 to 1.875	AP20357	APR20317
APC20318		3-pole	1.875 to 2.500	AP20358	APR20318
APC20415		4-wire,	0.875 to 1.375	AP20455	APR20415
APC20417	400§	4-pole	1.375 to 1.875	AP20457	APR20417
APC20418		4-pole	1.875 to 2.500	AP20458	APR20418

### Wire Well Takes .75" Maximum Conductor Size

APC203127	200	3-wire,	1.375 to 1.875	AP203511	APR203111
APC203128		3-pole	1.875 to 2.500	AP203512	APR203112
APC204127		4-wire	1.375 to 1.875	AP204511	APR204111
APC204128		4-pole	1.875 to 2.500	AP204512	APR204112
APC2041210	400§	4-pole	2.500 to 3.000	AP204513	APR204113

### Wire Well Takes .84" Maximum Conductor Size

APC40317	400§	3-wire,	1.375 to 1.875	AP40357	APR40317
APC40318		3-pole	1.875 to 2.500	AP40358	APR40318
APC40417		4-wire,	1.375 to 1.875	AP40457	APR40417
APC40418		4-pole	1.875 to 2.500	AP40458	APR40418

### Wire Well Takes 1.25" Maximum Conductor Size

APC4031210	400§	3-wire,	2.500 to 3.000	AP403510	APR403110
APC4031212		3-pole	3.000 to 3.800	AP403512	APR403112
APC4041210		4-wire,	2.500 to 3.000	AP404510	APR404110
APC4041212		4-pole	3.000 to 3.800	AP404512	APR404112

1P Heavy Duty Plugs and Receptacles

**1P****APC Arktite® Circuit Breakings  
Cable Extension Connectors**

Weatherproof

**30, 60 & 100 A, 200 & 400 A  
600 VAC/250 VDC, 50\*\*-400 hertz****Style 2****Grounded Through Extra Pole and Shell**

Complete Cat. #	Amps	Description	Cable Dia.	Plug Cat. #	Cable Connector Cat. #
APC3363	30	2-wire,	0.60 to 0.88	APJ3385	APR3363
APC3365		3-pole	0.87 to 1.02		APR3365
APC3463		3-wire,	0.60 to 0.88	APJ3485	APR3463
APC3465		4-pole	0.87 to 1.02		APR3465
APC3563		4-wire,	0.60 to 0.88	APJ3583	APR3563
APC3565		5-pole	0.87 to 1.20		APR3565
APC6363	60	2-wire,	0.75 to 0.88	APJ6385	APR6363
APC6365		3-pole	0.87 to 1.37		APR6365
APC6463		3-wire,	0.75 to 0.88	APJ6485	APR6463
APC6465		4-pole	0.87 to 1.37		APR6465
APC10365	100	2-wire,	1.00 to 1.38	APJ10387	APR10365
APC10367		3-pole	1.37 to 1.50		APR10367
APC10465		3-wire,	1.00 to 1.38	APJ10487	APR10465
APC10467		4-pole	1.37 to 1.50		APR10467

**Wire Well Takes .56" Maximum Conductor Size**

APC20325	200	2-wire,	0.875 to 1.375	AP20365	APR20325
APC20327		3-pole	1.375 to 1.875	AP20367	APR20327
APC20328			1.875 to 2.500	AP20368	APR20328
APC20425		3-wire,	0.875 to 1.375	AP20465	APR20425
APC20427		4-pole	1.375 to 1.875	AP20467	APR20427
APC20428			1.875 to 2.500	AP20468	APR20428

**Wire Well Takes .75" Maximum Conductor Size**

APC203225	200	2-wire,	0.875 to 1.375	AP203610	APR203210
APC203227		3-pole	1.375 to 1.875	AP203611	APR203211
APC203228			1.875 to 2.500	AP203612	APR203212
APC204227		3-wire,	1.375 to 1.875	AP204611	APR204211
APC204228		4-pole	1.875 to 2.500	AP204612	APR204212

**Wire Well Takes .84" Maximum Conductor Size**

APC40327	400§	2-wire,	1.375 to 1.875	AP40367	APR40327
APC40328		3-pole	1.875 to 2.500	AP40368	APR40328
APC40427		3-wire,	1.375 to 1.875	AP40467	APR40427
APC40428		4-pole	1.875 to 2.500	AP40468	APR40428

**Wire Well Takes 1.25" Maximum Conductor Size**

APC4032210	400§	2-wire	2.500 to 3.000	AP403610	APR403210
APC4032212		3-pole	3.000 to 3.500	AP403612	APR403212
APC4042210		3-wire,	2.500 to 3.000	AP404610	APR404210
APC4042212		4-pole	3.000 to 3.500	AP404612	APR404212

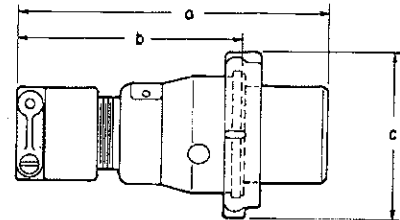
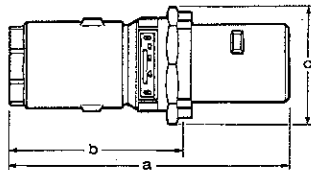
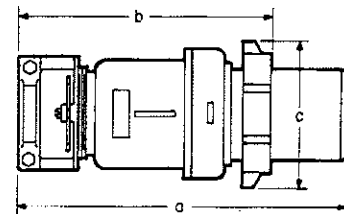
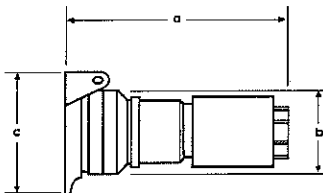
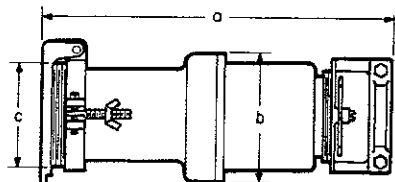
§, \*\*, †, \* - See page 967.

**Dimensions****AP and APJ Plugs**

Amps	No. Poles	a†	b	c
20	2	5 <sup>9</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>8</sub>	2 <sup>13</sup> / <sub>16</sub>
30	2, 3, 4, or 5	6 <sup>1</sup> / <sub>2</sub>	4 <sup>13</sup> / <sub>16</sub>	2 <sup>15</sup> / <sub>16</sub>
60	2 or 3	8 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>
60	4	8 <sup>1</sup> / <sub>2</sub>	5 <sup>13</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>
60	5	9	6 <sup>3</sup> / <sub>16</sub>	4 <sup>7</sup> / <sub>16</sub>
100	3	10 <sup>1</sup> / <sub>8</sub>	6 <sup>9</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>
100	4	10 <sup>1</sup> / <sub>8</sub>	6 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>
200	3	14 <sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>4</sub>
200	4	14 <sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>4</sub>
400	3	20 <sup>1</sup> / <sub>2</sub>	11 <sup>7</sup> / <sub>8</sub>	8
400	4	20 <sup>1</sup> / <sub>2</sub>	11 <sup>7</sup> / <sub>8</sub>	8

**APR Cable Connectors**

a†	b	c
5 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>
8 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>9</sup> / <sub>16</sub>
6 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>8</sub>	2 <sup>15</sup> / <sub>16</sub>
8 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>8</sub>	2 <sup>15</sup> / <sub>16</sub>
8 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>
10 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>16</sub>
10 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>
15 <sup>7</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	6 <sup>3</sup> / <sub>4</sub>
15 <sup>7</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	6 <sup>3</sup> / <sub>4</sub>
20 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>4</sub>
20 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>4</sub>

**Dimensions****APJ Plugs - 20 A****APJ Plugs - 30, 60 and 100 A****AP Plugs - 200 and 400 A****APR Cable Connectors -  
20, 30, 60 and 100 A****APR Cable Connectors -  
200 and 400 A**

# AR Arktite® Circuit Breaking Round Flange Receptacle Housings for Panel Mounting

1P

## Application:

AR round flange receptacle housings are designed specifically for semi-flush mounting in sheet metal panels or cabinets.

## Features:

- Back boxes are not needed for these receptacle assemblies.
- Where wiring behind a panel is exposed and subject to either mechanical injury or contact by personnel, suitable shields or guards should be provided.

## Standard Materials:

- Receptacle housings – copper-free aluminum
- Plug exteriors – copper-free aluminum
- Insulation: 30, 60, 100, 200 ampere – fiberglass-reinforced polyester
- Pressure and solder contacts – brass
- Crimp/solder contacts – leaded red brass

## Standard Finishes:

- Copper-free aluminum – natural
- Brass – natural
- Fiberglass-reinforced polyester – natural (red)
- Leaded red brass – electro-tin-plate

## Options:

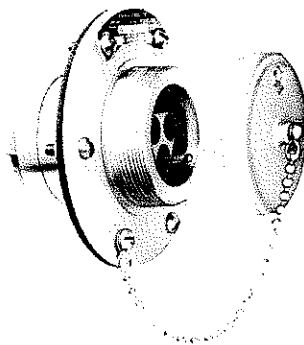
Available with these assemblies are:

- Reversed interiors (add suffix S22 to Cat. No.)
  - Special polarity (add suffix S4 to Cat. No.)
- See page 938 for details.

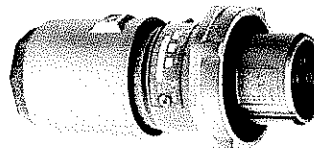
## Certifications and Complies:

- UL Standard: 1682

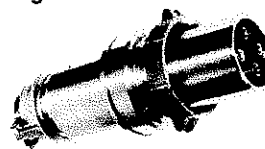
NOTE: For general information on application, features and grounding, see pages 936 and 937.



AR Receptacle housings with round flange and threaded cap



APJ Plugs with cable grip, Neoprene bushing and fastening ring



AP Plugs with cable grip, Neoprene bushing and fastening ring

1P

# AR Arktime® Circuit Breaking Round Flange Receptacle Housings for Panel Mounting With Threaded Cap

Weatherproof

30/60/100/200 A, 600 VAC/250 VDC, AP and APJ Plugs

Amps	Style†	Description	Recept. Cat. #	Cable Dia.	Plug Cat. #
30	1	3-wire, 3-pole }	AR6337	0.60 to 1.20	APJ3375
		4-wire, 4-pole }	AR6347	0.60 to 1.20	APJ3475
	2	3-wire, 4-pole }	AR6348	0.60 to 1.20	APJ3485
60	1	3-wire, 3-pole }	AR6637	0.75 to 1.45	APJ6375
		4-wire, 4-pole }	AR6647	0.75 to 1.45	APJ6475
	2	3-wire, 4-pole }	AR6648	0.75 to 1.45	APJ6485
100	1	3-wire, 3-pole }	AR61037	1.00 to 1.70	APJ10377
		4-wire, 4-pole }	AR61047	1.00 to 1.70	APJ10477
	2	3-wire, 4-pole }	AR61048	1.00 to 1.70	APJ10487
200	1	3-wire, 3-pole }	AR62031 ♦	.875 to 1.375	AP20355
				1.875 to 2.500	AP20358
	2	2-wire, 3-pole }	AR62032 ♦	.875 to 1.375	AP20365
				1.875 to 2.500	AP20368

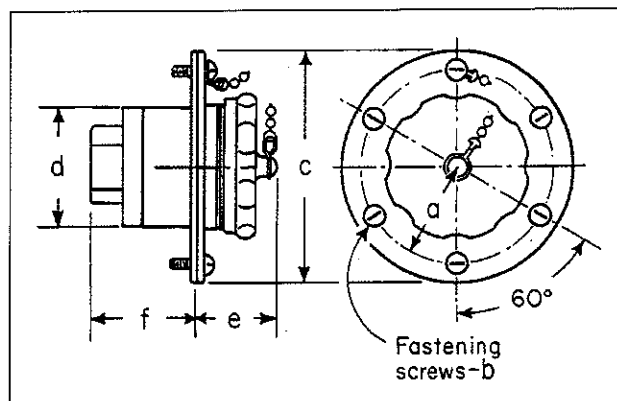
† Style 1 – Grounded through shell. Style 2 – Grounded through extra pole and shell.

♦ 200 ampere size is provided with clamp cover.

\* Pressure connectors are standard. Crimp/solder type terminators are optionally available for 2, 3 and 4-pole 30 ampere, 3 and 4-pole 60 and 100 ampere. For details, see table on page 938. To specify, add the suffix "T" to the catalog number. For example:

APJ3375-T (Plug) AR6337-T (Receptacle)

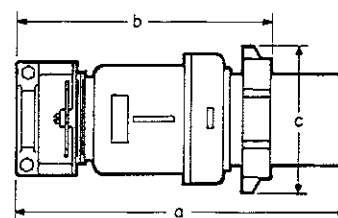
## Dimensions



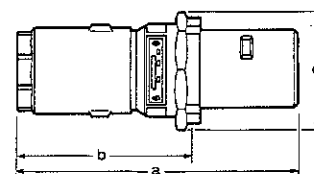
## AR Round Flange Receptacles

Description	a	b	c	d	e	f
30 amp. 2, 3, 4-pole	2	12-24	4¾	27/16	1¾	2¼
60 amp. 2, 3-pole	2	12-24	4¾	213/16	1¾	3¾
60 amp. 4-pole	2	12-24	4¾	31/8	1¾	3¾
100 amp. 2, 3-pole	2	12-24	4¾	31/16	1¾	49/16
100 amp. 4-pole	2	12-24	4¾	39/16	1¾	49/16
200 amp. 3-pole	3¾	¾-16	7¾	43/16	27/8	51/8

## AP 200A Plugs



## APJ 30, 60 and 100A Plugs



Amps	No. Poles	a	b	c
30	2, 3 or 4	6½	413/16	215/16
60	2 or 3	8½	5¾	35/8
60	4	8½	513/16	3¾
100	2 or 3	10½	69/16	3¾
100	4	10½	65/8	41/8
200	3	14¾	1011/16	6¾

† These dimensions are approximate and vary with cable size.

# APQ Arktime® Circuit Breaking Motor Plugs

NEMA 4 Watertight

1P

APJ Plugs, APR Cable Connector Receptacles  
30/60/100 A, 250 VDC/600 VAC, 50\*\*-400 hertz

## Application:

APQ motor plugs are used:  
• on portable electric equipment

## Features:

- Eliminates problem of storing and protecting a long length of portable cord and plug on portable device
- Connection to fixed receptacle used as power source is made with cord sets which may be hung on wall, out of the way
- Cord sets are made up using an APR receptacle at one end and an APJ plug at the other
- Cord sets may be used singly or connected together to provide longer lengths when needed
- With spare cord sets on hand, portable equipment may be kept in service while normal cord replacement is being made
- Where design of portable equipment permits, APQ motor plugs can be attached directly to a sheet metal panel or cabinet
- May be mounted on AR and AJ back boxes for conduit connection
- See typical installation diagram on page 972

## Standard Materials:

- Motor plugs: mounting plate – *Feraloy*®, Iron Alloy; protective sleeve – copper-free aluminum
- Plug and receptacle exteriors – copper-free aluminum
- Back boxes – copper-free aluminum
- Insulation – fiberglass-reinforced polyester
- Pressure and solder contacts – brass
- Crimp/solder contacts – leaded red brass

## Standard Finishes:

- *Feraloy* – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural
- Brass – natural
- Fiberglass-reinforced polyester – natural (red)
- Leaded red brass – electro-tin-plate

## Options:

Available with these assemblies:

- Special polarity (add suffix S4 to Cat. No.)
- See page 938 for details.

## Certifications and Compliances:

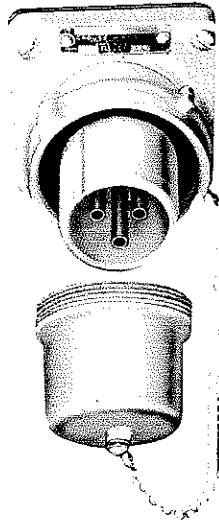
- UL Standards: 514, 1682
  - CSA Standard C22.2 No. 182.1
- NOTE: For general information on application, features and grounding, refer to pages 936 and 937.

‡ Style 1 – Grounded through shell.

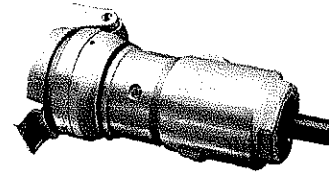
Style 2 – Grounded through extra pole and shell.

\* Pressure connectors are standard. Crimp/solder terminators are optionally available for 2, 3 and 4 pole 30 ampere, 3 and 4-pole 60 and 100 ampere. For details, see page 938. To specify, add the suffix "T" to the catalog number. For example: APR3355-T (Connector) APJ3375-T (Plug)

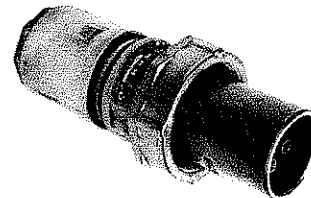
\*\* For use on systems less than 60 hertz the receptacles, plugs and connectors are for disconnect use only.



APQ Motor plugs with square flange, gaskets, fastening ring, and exposed contacts.

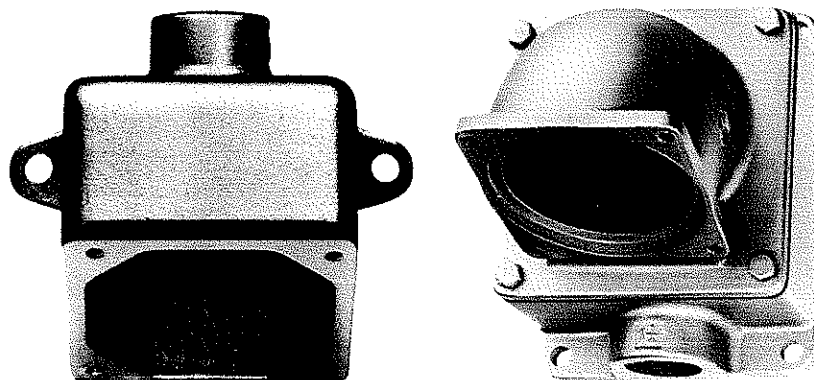


APR Cable connector receptacles with cable grip, Neoprene bushing, and protected contacts.



APJ Plugs with cable grip, Neoprene bushing, exposed contacts, and fastening ring.

Amps	Style‡	Description	Plug Cat. #	Cable Dia.	Cable Connector Receptacle Cat. #	Motor Plug Cat. #
30	1	2-wire, 2-pole *	APJ3275	0.60 to 0.88	APR3253	APQ327
		3-wire, 3-pole *	APJ3375	0.60 to 0.88	APR3255	APQ327
		4-wire, 4-pole *	APJ3475	0.60 to 0.88	APR3353	APQ337
		4-wire, 4-pole *	APJ3475	0.87 to 1.02	APR3355	APQ337
	2	2-wire, 3-pole *	APJ3385	0.60 to 0.88	APR3453	APQ347
		3-wire, 4-pole *	APJ3485	0.60 to 0.88	APR3455	APQ347
		3-wire, 4-pole *	APJ3485	0.87 to 1.02	APR3363	APQ338
		3-wire, 4-pole *	APJ3485	0.87 to 1.02	APR3365	APQ338
60	1	2-wire, 2-pole *	APJ6275	0.75 to 0.88	APR3463	APQ348
		3-wire, 3-pole *	APJ6375	0.75 to 0.88	APR3465	APQ348
		4-wire, 4-pole *	APJ6475	0.75 to 0.88	APR6253	APQ627
		4-wire, 4-pole *	APJ6475	0.87 to 1.37	APR6255	APQ627
	2	2-wire, 3-pole *	APJ6385	0.75 to 0.88	APR6353	APQ637
		3-wire, 4-pole *	APJ6485	0.75 to 0.88	APT6355	APQ637
		3-wire, 4-pole *	APJ6485	0.87 to 1.37	APR6453	APQ647
		3-wire, 4-pole *	APJ6485	0.87 to 1.37	APR6455	APQ647
100	1	2-wire, 2-pole *	APJ10277	1.00 to 1.38	APR6363	APQ638
		3-wire, 3-pole *	APJ10377	1.00 to 1.38	APR6365	APQ638
		4-wire, 4-pole *	APJ10477	1.00 to 1.38	APR6463	APQ648
		4-wire, 4-pole *	APJ10477	1.37 to 1.50	APR6465	APQ648
	2	2-wire, 3-pole *	APJ10387	1.00 to 1.38	APR10255	APQ1027
		3-wire, 4-pole *	APJ10487	1.00 to 1.38	APR10257	APQ1027
		3-wire, 4-pole *	APJ10487	1.37 to 1.50	APR10355	APQ1037
		3-wire, 4-pole *	APJ10487	1.37 to 1.50	APR10357	APQ1037



Typical back boxes used with  
APQ motor plugs

## ARE

For APQ 30 Amp.

Hub Size	Cat. #
1/2	ARE13
3/4	ARE23
1	ARE33

For APQ 60 Amp.

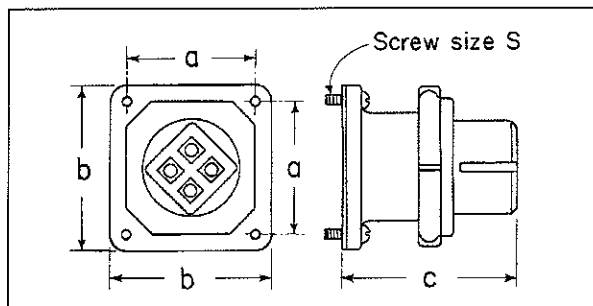
Hub Size	Cat. #
1	ARE36
1 1/4	ARE46
1 1/2	ARE56

## AJ

For APQ 60 and 100 Amp.

Hub Size	Cat. #
1	AJ37
1 1/4	AJ47
1 1/2	AJ57
2	AJ67

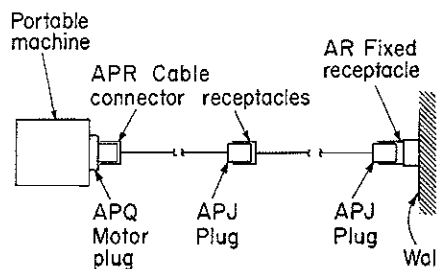
## Dimensions



## APQ Motor Plugs

Amps.	a	b	c	s
30	2 3/4	3 3/8	3 3/8	12-24
60	3 1/2	4 1/4	4 7/8	5/16-18
100	3 1/2	4 1/4	6 1/8	5/16-18
(2 & 3-pole)				
100	3 1/2	4 1/4	6 7/16	5/16-18
(4-pole)				

## Typical installation



NOTE: For dimensions of APR cable connector receptacles and APJ plugs, refer to page 968.  
For additional back box listings, see pages 957 and 958. For back box dimensions, see pages 965 and 966.